02-8708-02-SR
REV. NO. 0

FINAL DRAFT
SITE INSPECTION REPORT
AUTOTRONIC PRODUCTS
OCEANSIDE, NEW YORK

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8708-02
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

OCTOBER 15, 1990

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

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295655

CONTENTS

SECTION 1

SITE INSPECTION REPORT EXECUTIVE SUMMARY

SITE SUMMARY

Autotronic Products is an active facility located in an industrial/residential area in Oceanside, Nassau County, New York. According to the current owner and operator, Mr. Joseph Soadafina, the facility was constructed in 1951. In 1965, the building was purchased by Union Corporation and in 1982, Mr. Spadafina purchased the facility from Union Corporation. Electronic equipment is designed and manufactured at this facility. The back of the facility is entirely fenced, and access is limited to employees and official visitors. However, other parts of the building have been rented out to various tenants, all of whom have access to common areas including the fenced area.

Between 1981 and 1982, approximately 50 gallons of 1,1,1-trichloroethane (TCA) was illegally dumped on the paved section in the back of the building. The 1,1,1-trichloroethane, which was from a spent cleaning bath, was discarded in 1-quart batches. Once dumped, the waste may have evaporated or run off the pavement. The paved area slopes slightly to the west in the direction of unpaved property owned by the Long Island Railroad.

The illegal dumping ceased in 1982. Autotronic Products was fired $1,000 by the New York State Department of Environmental Conservation (NYSDEC) and is currently regulated by the Nassau County Health Department (NCHD). The facility produces less than one 55-gallon drum of hazardous waste a year due to slowdown and changes in production processes. Autotronic Products stores its hazardous waste on site. The spent 1,1,1-trichloroethane is collected in drums and stored on pallets in the back of the warehouse. The storage area has been approved by the NCHD. The 1,1,1-trichloroethane, acetone, and paint thinners are hauled away on an as-needed basis by NYSDEC-and NCHD-approved waste haulers.

The only other waste management deficiencies or violations noted by the NCHD involved improper temporary waste storage and paperwork deadlines. These violations were corrected prior to the NCHD inspection on March 2, 1987.

NUS Region 2 FIT conducted a nonsampling site inspection of the Autotronic Products Site on September 3, 1987, to confirm current on-site conditions. There were no readings above background levels detected on the HNu photoionization detector. The OVA flame ionization detector received readings above background in the vicinity of the building.

Ref. Nos. 1, 2, 8, 9, 10, 21, 22, 23

SECTION 2

ENVIRONMENTAL PROTECTION AGENCY FORM 2070-13

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D981184211

. SITE NAME AND LOCATION

SITE NAME (Legal, common, or descriptive name of site): A otronic Products

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: 3300 Lawson Boulevard

CITY: Oc anside

04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST.
NY	11572	Nassau	059	5

C RDINATES

LATITUDE	LONGITUDE
4 0° 3 7' 4 6". N	0 7 3° 3 9' 1 3". W

10 TYPE OF OWNERSHIP (Check one)
X A. PRIVATE _ B. FEDERAL _ C. STATE
_ D. COUNTY _ E. MUNICIPAL _ F. OTHER
_ G. UNKNOWN

I. INSPECTION INFORMATION

DATE OF INSPECTION: 09 / 03 / 87 (NTH DAY YEAR)

02 SITE STATUS: X ACTIVE _ INACTIVE

03 YEARS OF OPERATION: 1981 (BEGINNING YEAR) / Present (ENDING YEAR) _ UNKNOWN

ENCY PERFORMING INSPECTION (Check all that apply)
A. EPA X B. EPA CONTRACTOR NUS Corp. Region 2 FIT (Name of firm) _ C. MUNICIPAL _ D. MUNICIPAL CONTRACTOR ____ (Name of firm)
E. STATE _ F. STATE CONTRACTOR ____ (Name of firm) _ G. OTHER ____ (Specify)

EF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
lliam Schnitzerling	Environmental Scientist	NUS Corp.	(201) 225-6160
OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
n Ducar	Geologist	NUS Corp.	(201) 225-6160
an Pedersen	Chemical Engineer	NUS Corp.	(201) 225-6160

E REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO.
Mr. Joseph Spadafina	President of Autotronic Products	3300 Lawson Blvd Oceanside, NY	(516) 536-6765

CESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
PERMISSION WARRANT	0900	Sunny, 75°, wind north 5-8 mph

. INFORMATION AVAILABLE FROM

NTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
y Brochu	U.S. EPA	(201) 906-6802

RSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Jennifer O. Leahy	Region 2 FIT	NUS Corp.	(201) 225-6160	10 / 05 / 90 (MONTH DAY YEAR)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION
01 STATE NY 02 SITE NUMBER D981184211

. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

PHYSICAL STATES (Check all that apply)		02 WASTE QUANTITY AT SITE	03 WASTE CHARACTERISTICS (Check all that apply)		
. SOLID	E. SLURRY	(Measures of waste quantities must be independent)	X A. TOXIC	_ E. SOLUBLE	X I. HIGHLY VOLATILE
. POWDER, FINES	X F. LIQUID	TONS ____	_ B. CORROSIVE	_ F. INFECTIOUS	_ J. EXPLOSIVE
C. SLUDGE	_ G. GAS	CUBIC YARDS ____	_ C. RADIOACTIVE	_ G. FLAMMABLE	_ K. REACTIVE
. OTHER ____ (Specify)		NO. OF DRUMS one	_ D. PERSISTENT	_ H. IGNITABLE	_ L. INCOMPATIBLE
					_ M. NOT APPLICABLE

. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
LW	OILY WASTE			
OL	SOLVENTS	50	gallons	Spent 1,1,1-trichloroethane dumped on site in 1 - quart batches between 1981 and 1982.
SD	PESTICIDES			
CC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
CD	ACIDS			
BAS	BASES			
ES	HEAVY METALS			

. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	1,1,1-trichloroethane	71-55-6	Dumped in back of site on paved area.	Unknown	Unknown

. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS	1,1,1-trichloroethane	71-55-6	FDS		
DS	Flux	999	FDS		
FDS	Acetone	67-64-1	FDS		
DS	Paint thinners	999	FDS		

. SOURCES OF INFORMATION (See specific references. e.g., state files, sample analysis, reports)

eliminary Assessment Report for Autotronic Products, E.A. Science and Technology, Middletown, New York, 1986.
eld Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corporation, Region 2 FIT, Edison, New Jersey, September 3, 1987.
Telecon Note: Conversation between Rocky Piaggione, New York State Department of Environmental Conservation, and William Schnitzerling, NUS Corp., August 5, 1987.
lecon Note: Conversation between Joe Schechter, Nassau County, Division of Health, and William Schnitzerling, NUS Corp., August 5, 1987.
Chemical/Solvent Waste Report, Bureau of Land Resources Management, Nassau County Health Department. Permit Number 295.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

1. IDENTIFICATION
01 STATE NY 02 SITE NUMBER D981184211

I. AZARDOUS CONDITIONS AND INCIDENTS

1 A. GROUNDWATER CONTAMINATION
3 POPULATION POTENTIALLY AFFECTED: 149,400
02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

ere is potential for groundwater contamination. Autotronic Products dumped approximately 50 gallons of 1,1,1-ichloroethane onto a paved section of the back of its property. If the waste migrated off site into the downgradient, npaved property owned by the Long Island Railroad, it had the potential to leach into the groundwater contaminating the upper glacial and the Magothy Aquifers. These aquifers are hydraulically connected. The upper glacial aquifer is used for igation and the Magothy is used for drinking purposes.

1 X B. SURFACE WATER CONTAMINATION
3 POPULATION POTENTIALLY AFFECTED: 149,400
02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

ere is a potential for surface water contamination. Approximately 50 gallons of 1,1,1-trichloroethane was dumped onto a ved section in the back of the property. Waste migrated off site in the direction of Reed Channel located 0.1 mile west of the site. Reed Channel is used for recreational purposes.

1 C. CONTAMINATION OF AIR
3 PULATION POTENTIALLY AFFECTED: ____
02 OBSERVED (DATE:) _ POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

There is no potential for air contamination. Autotronic Products presently employs proper waste management practices.

1 D. FIRE/EXPLOSIVE CONDITIONS
3 PULATION POTENTIALLY AFFECTED: ____
02 OBSERVED (DATE:) _ POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

e site inspection conducted by NUS Corp. Region 2 FIT did not indicate the potential for fire or explosion.

1 E. DIRECT CONTACT
3 POPULATION POTENTIALLY AFFECTED: ____
02 OBSERVED (DATE:) _ POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

The site inspection conducted by NUS Region 2 FIT did not inilcate the potential for direct contact. The illegal dumping s ceased and the wastes are now properly managed, according to the NCHD.

1 X F. CONTAMINATION OF SOIL
3 AREA POTENTIALLY AFFECTED: 0.04 (ACRES)
02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

e area where the waste was dumped is paved. The soil that may have been contaminated by waste migrating from Autotronic oducts is the downslope, unpaved Long Island Railroad property bordering the back of the site.

G. DRINKING WATER CONTAMINATION
3 POPULATION POTENTIALLY AFFECTED: 149,400
02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

Waste migrating from Autotronic Products has the potential to contaminate the upper glacial aquifer. Since there is a raulic connection between the upper glacial and the Magothy aquifers, there is a limited potential for drinking water tamination. The depth to the Magothy aquifer is 500 feet.

X H. WORKER EXPOSURE/INJURY
KERS POTENTIALLY AFFECTED: 20
02 OBSERVED (DATE:) X POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

Although Autotronic Products is in compliance with its hazardous waste permits, workers may be exposed or injured when managing the 1,1,1-trichloroethane. The waste is stored in the back of the warehouse. Access is restricted to authorized rsonnel.

I. POPULATION EXPOSURE/INJURY
ULATION POTENTIALLY AFFECTED: 149,400
02 OBSERVED (DATE:) _ POTENTIAL _ ALLEGED
04 NARRATIVE DESCRIPTION

There is a limited potential for drinking water contamination due to the depth of the Magothy aquifer. Nearby surface waters are used for recreational purposes.

. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

J. DAMAGE TO FLORA — 02 _ OBSERVED (DATE: ______________) _ POTENTIAL _ ALLEGED

NARRATIVE DESCRIPTION

It is unlikely that there would be damaged to flora. The 1,1,1-trichloroethane was illegally dumped on the pavement in small quantities. In addition, the site is located in a commercial/industrial area.

. DAMAGE TO FAUNA — 02 _ OBSERVED (DATE: ______________) _ POTENTIAL _ ALLEGED

NARRATIVE DESCRIPTION (Include name(s) of species)

It is unlikely that there would be any damage to fauna. The 1,1,1-trichloroethane was illegally dumped on the pavement in small quantities. In addition, the site is located in a commercial/industrial area.

. CONTAMINATION OF FOOD CHAIN — 02 _ OBSERVED (DATE: ______________) _ POTENTIAL _ ALLEGED

NARRATIVE DESCRIPTION

It is unlikely that contamination of the food chain would occur because the 1,1,1-trichloroethane is only slightly bioaccumulative and has an elimination half-life of 2 days.

X M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 X OBSERVED (DATE: 1981-1982) _ POTENTIAL _ ALLEGED

POPULATION POTENTIALLY AFFECTED: 149,000

04 NARRATIVE DESCRIPTION

1,1,1-trichloroethane was illegally dumped in 1-quart batches behind the facility from 1981 to 1982. As of September 1987, the wastes were properly stored inside the warehouse in accordance with Nassau County Heatlh Department regulations.

X . DAMAGE TO OFFSITE PROPERTY — 02 _ OBSERVED (DATE: ______________) X POTENTIAL _ ALLEGED

NARRATIVE DESCRIPTION

There is a potential that off-site property may have been damaged by the 1,1,1-trichloroethane that was illegally dumped. The contaminant may have migrated off site to the downgradient property owned by Long Island Railroad.

O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 _ OBSERVED (DATE: ______________) _ POTENTIAL _ ALLEGED

NARRATIVE DESCRIPTION

There is no potential for contamination of sewers, storm drains, and WWTPs. When the 1,1,1-trichloroethane was illegally dumped, it did not come into contact with storm drains or sewers. The present storage area contains a spill control system to prevent waste migration.

X . ILLEGAL/UNAUTHORIZED DUMPING — 02 X OBSERVED (DATE: 1981 - 1982) _ POTENTIAL _ ALLEGED

NARRATIVE DESCRIPTION

Between 1981 and early 1982, an estimated 50 gallons of 1,1,1-trichloroethane were illegally dumped on the paved section of the property behind Autotronic Products. This practice ceased in 1982.

DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None

. TOTAL POPULATION POTENTIALLY AFFECTED: 149,400

. COMMENTS

Since being fined for illegally dumping approximately 50 gallons of TCA, Autotronic Products has been reporting to the Nassau County Health Department. Any recorded violations of the permits have been minor and corrected to the satisfaction of NCHD. According to the health department, 1,1,1-trichloroethane is the only suspected hazardous waste at this site.

V. SOURCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)

Project Note: From W. Schnitzerling, to Autotronic Products File, Subject: Groundwater usage near the site, September 4, 1987.
Telecon Note: Conversation between Joe Schecter, Nassau County Division of Health, and William Schnitzerling, NUS Corp., August 5, 1987.
Telecon Note: Conversation between Rocky Piaggione, New York State Department of Environmental Conservation, and William Schnitzerling, NUS Corp., August 5, 1987.
Field Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corporation, Region 2 FIT, Edison, New Jersey, September 3, 1987.
Preliminary Assessment Report of Autotronic Products, E.A. Science and Technology, 1986.
Telecon Note: Conversation between Don Myott, Nassau County Health Department, Pure Waters Division, and S. Shulfer, NUS Corporation, May 10, 1988.
General Sciences Corporation, Graphic Exposure Modeling System (GEMS) Landover, Maryland, 1986.
New York State Department of Environmental Conservation, Wildlife Resource Center, "Significant Coastal Fish and Wildlife Habitat, West Hempstead Bay," "Significant Coastal Fish and Wildlife Habitat, Middle Hempstead Bay," and "Significant Coastal Fish and Wildlife Habitat, Nassau Beach," Delmar, New York, 1987.
Chemical, physical, and biological properties of compounds present at hazardous waste sites. Final report prepared for the U.S. Environmental Protection Agency, Clement Associates, Inc., September 1985.
New York State Atlas of Community Water System Sources, New York State Department of Health, 1982.
Soren, Julian. Results of subsurface exploration in the mid-island area of western Suffolk County, Long Island, New York. Long Island Water Resources, Bulletin No. 1, 1971.

[redacted]

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D981184211

. PERMIT INFORMATION

T[redacted]E OF PERMIT ISSUED ([redacted]eck all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
_ A. NPDES				
_[redacted]. UIC				
_ C. AIR				
_[redacted]. RCRA				
_[redacted]. RCRA INTERIM STATUS				
_[redacted]. SPCC PLAN				
_[redacted]. STATE (Specify)				
X H. LOCAL (Specify) County	295			Chemical Inventory Permit to operate a toxic or hazardous materials storage facility; Permit to store hazardous materials on site.
X[redacted]. OTHER (Specify) Article XI S[redacted]id Waste Management Facility Permit 109				
X J. NONE				

I. [redacted]ITE DESCRIPTION

S[redacted]rage/Disposal (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE	04 TREATMENT (Check all that apply)	05 OTHER
_[redacted]. SURFACE IMPOUNDMENT			_ A. INCINERATION	X A. BUILDINGS ON SITE
_[redacted]. PILES			_ B. UNDERGROUND INJECTION	
_[redacted]. DRUMS, ABOVE GROUND			_ C. CHEMICAL/PHYSICAL	Adjacent
_ D. TANK, ABOVE GROUND			_ D. BIOLOGICAL	06 AREA OF SITE
_[redacted]. TANK, BELOW GROUND			_ E. WASTE OIL PROCESSING	
_[redacted]. LANDFILL			_ F. SOLVENT RECOVERY	
_[redacted]. LANDFARM			_ G. OTHER RECYCLING/RECOVERY	0.04
_ H. OPEN DUMP			X H. OTHER N/A (Specify)	(Acres)
X I. OTHER Spill (Specify)	50	Gallons		

[redacted]

C[redacted]MENTS

Th[redacted] only reported incident at this site is the dumping of approximately 50 gallons of 1,1,1-trichloroethane on the paved a[redacted]a behind the facility. It was dumped in 1-quart batches between 1981 and 1982. The 1,1,1-trichloroethane is believed t[redacted]have run off the western boundary of Autotronic's property onto the unpaved land owned by the Long Island Railroad. The waste may have leached into the groundwater.

C[redacted]rently, waste is collected in a 55-gallon drum and transported off site by licensed haulers on an as-needed basis. A[redacted]tronic Products produces less then 1 drum of waste a year. Because such a low volume of waste is produced, Autotronic Products is in the process of petitioning the NCHD for a change in its hazardous waste management permits. This facility is regularly inspected by the NCHD, and there are no complaints or violations on file with local or state officials.

. [redacted]NTAINMENT

C[redacted]TAINMENT OF WASTES (Check one)

_ A. ADEQUATE, SECURE _ B. MODERATE _ C. INADEQUATE, POOR X D. INSECURE, UNSOUND, DANGEROUS

D[redacted]CRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

The waste was dumped directly onto a paved surface which had no diversion system. At present, Autotronic Products generates less than 1 drum of waste a year. The 55-gallon drum is stored on a pallet in the warehouse in a secured area. T[redacted] last inspection of the waste storage area was March 2, 1987, and no violations were noted.

ACCESSIBILITY

WASTE EASILY ACCESSIBLE: _ YES X NO

C[redacted]MENTS

The waste storage shed is not easily accessible. Wastes are stored on pallets in an enclosed area that is locked.

S[redacted]RCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)

N[redacted]sau County Department of Health, Solid Waste Management Facility Permits, No. 109, February 6, 1984 and No. 295, February 7, 1985.
Telecon Note: Conversation between Joe Schecter, Nassau County Division of Health, and William Schnitzerling, NUS Corp, [redacted]gust 5, 1987.
F[redacted]ld Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corporation Region 2 FIT, Edison, New Jersey, September 3, 1987.
Preliminary Assessment Report of Autotronic Products, E.A. Science and Technology, March 24, 1986.
L[redacted]tter from Joseph M. Spadefina, President Autotronic Products, to Mr. Schaefer, Nassau County Department of Health, [redacted]ne 24, 1987.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

1. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D981184211

ENVIRONMENTAL INFORMATION

PERMEABILITY OF UNSATURATED ZONE (Check one)

_ A. 10^{-6} - 10^{-8} cm/sec X B. 10^{-4} - 10^{-6} cm/sec _ C. 10^{-4} - 10^{-3} cm/sec _ D. GREATER THAN 10^{-3} cm/sec

PERMEABILITY OF BEDROCK (Check one)

X A. IMPERMEABLE (Less than 10^{-6} cm/sec) _ B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) _ C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec) _ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
2,700 (ft)	Unknown (ft)	Unknown

NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
14 (in)	2.75 (in)	1 %	West	1 %

FLOOD POTENTIAL 10

SITE IS IN 100 YEAR FLOODPLAIN _ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE OTHER

A. 0.75 (mi) B. > 1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

> 1 (mi)

ENDANGERED SPECIES: Not Applicable

LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS: NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AG LAND
A. .002 (mi)	B. 0.04 mile to Residential (mi) 2 miles to Wildlife Reserve	C. > 2 (mi)	D. > 1 (mi)

DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Most of the area behind the Autotronic Products building is paved, having a very slight slope to the west. This slope leads to the railroad tracks owned by the Long Island Railroad. The topography of the area surrounding this site (Oceanside, New York) is generally level. The land gently slopes towards the tidal channels south of Autotronic Products.

I SOURCES OF INFORMATION (Cite specific references e.g., state files, sample analysis, reports)

New York State Department of Health, New York State Atlas of Community Water System Sources, 1982.
Telecon Note: Conversation between Joe Schecter, Nassau County Division of Health, and William Schnitzerling, NUS Corp., August 5, 1987.
Telecon Note: Conversation between Rocky Piaggione, New York State Department of Environmental Conservation, and William Schnitzerling, NUS Corp., August 5, 1987.
Field Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corporation, Region 2 FIT, Edison, New Jersey, September 3, 1987.
U.S. Department of Agriculture, Soil Conservation Service, Important Farmland of New York, 1977.
Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Hempstead, NY, Community Panel No. 3604670051B, 1985.
Preliminary Assessment Report of Autotronic Products, EA Science and Technology, March 24, 1986.
New State Department of Environmental Conservation, Wildlife Resource Center, "Significant Coastal Fish and Wildlife Habitat, West Hempstead Bay," "Significant Coastal Fish and Wildlife Habitat, Middle Hempstead Bay," and "Significant Coastal Fish and Wildlife Habitat, Nassau Beach," Delmar, New York, 1987.
U.S. Geological Survey, Hydrogeology of the Town of North Hempstead, Nassau County, Long Island, New York. Long Island Water Resources Bulletin 12.
Kimmel, Grant E., et al. Analog model prediction of the hydrologic effects of sanitary sewerage in southeast Nassau and southwest Suffolk Counties, New York. Long Island Water Resources Bulletin LIW-6, 1977.
Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.
Project Note: From W. Schnitzerling, to Autotronic Products file, Subject: Groundwater usage near site, September 4, 1987.
General Sciences Corporation, Graphic Exposure Modeling System (GEMS), Landover, Maryland, 1986.
Three Mile Vicinity Map based on U.S. Department of the Interior, Geological Survey Topographic Maps, 7.5 minute series, Quadrangles of "Lynbrook, NY," "Lawrence, NY," and "Freeport, NY," 1969.
Soren, Julian. Results of subsurface exploration in the mid-island area of Western Suffolk County, Long Island, New York. Long Island Water Resources, Bulletin No. 1, 1971.
Atlantic Coast Ecological Inventory, New York, NY-Conn-NJ, U.S. Fish and Wildlife Service, 1980.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION
01 STATE 02 SITE NUMBER
NY D981184211

[redacted]

. DRINKING WATER SUPPLY

TYPE OF DRINKING SUPPLY [redacted]heck as applicable)

	SURFACE	WELL	02 STATUS ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
[redacted]ITY	A. _	B. X	A. _	B. _	C. _	A. 1.5 (mi)
[redacted]-COMMUNITY	C. _	D. _	D. _	E. _	F. _	B. 0 (mi)

[redacted]ROUNDWATER

G[redacted]NDWATER USE IN VICINITY (Check one)

A. ONLY SOURCE FOR DRINKING X B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) _ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) _ D. NOT USED, UNUSEABLE

[redacted]

P[redacted]ULATION SERVED BY GROUND WATER: 149,400 03 DISTANCE TO NEAREST DRINKING WATER WELL: 1.5 (mi)

DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
[redacted] 5 (ft)	South	500 (ft)	Unknown (gpd)	X YES _ NO

DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

T[redacted]re are three aquifers underlying the site: the upper glacial, the Magothy, and the Lloyd aquifers. The upper glacial a[redacted] Magothy are hydraulically connected. The upper glacial aquifer is used primarily used for irrigation purposes. This a[redacted]ifer consists of glacial deposits of stratified sand and gravel in multiwater spillways and outwash plains. This aquifer varies in thickness from 100 to 400 feet. The Magothy aquifer consits of beds and lenses of fine and coarse sand containing traces to large amounts of clay and silt intercolated with thick to thin siltstone lenses of clay, silt, and c[redacted]yey silty sand. The aquifer's depth in this area varies from 500 to 7,000 feet and is the sole source of water for p[redacted]able purposes in the area. The Lloyd aquifer is located beneath the Magothy; at this time this aquifer is not used. B[redacted]rock is composed of crystalline metamorphic and various rocks such as schist, gneiss, and granite. The soft clayey zone within bedrock is more than 100 feet thick. The actual depth of bedrock is from the surface to 2,700 feet.

R[redacted]HARGE AREA

_ YES COMMENTS
X NO

II. DISCHARGE AREA

X YES COMMENTS The area around this site is a groundwater discharge area for the upper glacial aquifer.
_ NO

.S[redacted]FACE WATER

S[redacted]FACE WATER USE (Check one)

X A. RESERVOIR, RECREATION DRINKING WATER SOURCE _ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES _ C. COMMERCIAL, INDUSTRIAL _ D. NOT CURRENTLY USED

A[redacted]ECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Reed Channel	Unknown	0.10 (mi)
Hog Island Channel	Unknown	0.20 (mi)
East Rockaway Channel	Unknown	0.40 (mi)
Hewlett Bay	Unknown	0.60 (mi)

D[redacted]OGRAPHIC AND PROPERTY INFORMATION

T[redacted]AL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE	02 DISTANCE TO NEAREST POPULATION
A. 13,200 NO. OF PERSONS	B. 63,900 NO. OF PERSONS	C. 149,400 NO. OF PERSONS	0.02 (mi)

NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE: Approx. 21,400

04 DISTANCE TO NEAREST OFF-SITE BUILDING: 0.02 (mi)

POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site. e.g., ral, village, densely populated urban area)

A[redacted]otronic Products is located in a moderately populated section of Oceanside, New York. The area of the site has mixed [redacted]idential and commercial/industrial uses.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D981184211

. SAMPLES TAKEN

MPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
ROUNDWATER			--
SURFACE WATER			
ASTE			
IR			
RUNOFF			
PILL			
OIL			
VEGETATION			
THER	No samples were collected.		

I. FIELD MEASUREMENTS TAKEN

1 PE	02 COMMENTS
r Monitoring	No readings above background conditions were detected around the outside of the facility, on the organic vapor analyzer (OVA) flame ionization detector or the HNu photoionization detector. However, a reading of 5 ppm was detected inside the warehouse on the OVA.

. PHOTOGRAPHS AND MAPS

1 PE X GROUND _ AERIAL 02 IN CUSTODY OF NUS Corporation Region 2 FIT
(Name of organization or individual)

3 APS 04 LOCATION OF MAPS

YES NUS Corporation Region 2 FIT, Edison, New Jersey
_ NO

. HER FIELD DATA COLLECTED (Provide narrative description)

eld Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corp. Region 2 FIT, Edison, NJ, September 3, 1987.

. OURCES OF INFORMATION (Cite specific references. e.g., state files, sample analysis, reports)

Field Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corporation, Region 2 FIT, Edison, New Jersey, September 3, 1987.

ree Mile Vicinity Map based on U.S. Department of the Interior, Geological Survey Topographic Maps, 7.5 minute series, Quadrangles of "Lynbrook, NY," "Lawrence, NY," and "Freeport, NY," 1969.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D981184211

[II.] CURRENT OWNER(S)

	PARENT COMPANY (If applicable)
NAME: Joseph Spadafina	08 NAME:
02 D + B NUMBER:	09 D + B NUMBER:
STREET ADDRESS (P.O. Box, RFD#, etc.): 33[illegible] Lawson Boulevard	10 STREET ADDRESS (P.O. Box, RFD#, etc.):
04 SIC CODE:	11 SIC CODE:
CITY: Oceanside	12 CITY:
06 STATE: NY	13 STATE:
07 ZIP CODE: 11572	14 ZIP CODE:

NAME:	08 NAME:
02 D + B NUMBER:	09 D + B NUMBER:
STREET ADDRESS (P.O. Box, RFD#, etc.):	10 STREET ADDRESS (P.O. Box, RFD#, etc.):
04 SIC CODE:	11 SIC CODE:
CITY:	12 CITY:
06 STATE:	13 STATE:
07 ZIP CODE:	14 ZIP CODE:

NAME:	08 NAME:
02 D + B NUMBER:	09 D + B NUMBER:
STREET ADDRESS (P.O. Box, RFD#, etc.):	10 STREET ADDRESS (P.O. Box, RFD#, etc.):
04 SIC CODE:	11 SIC CODE:
CITY:	12 CITY:
06 STATE:	13 STATE:
07 ZIP CODE:	14 ZIP CODE:

NAME:	08 NAME:
02 D + B NUMBER:	09 D + B NUMBER:
STREET ADDRESS (P.O. Box, RFD#, etc.):	10 STREET ADDRESS (P.O. Box, RFD#, etc.):
04 SIC CODE:	11 SIC CODE:
CITY:	12 CITY:
06 STATE:	13 STATE:
07 ZIP CODE:	14 ZIP CODE:

[III.] PREVIOUS OWNER(S) (List most recent first) / IV. REALTY OWNER(S) (If applicable; list most recent first)

PREVIOUS OWNER(S)	REALTY OWNER(S)
NAME: Un[illegible]n Corporation	01 NAME:
02 D + B NUMBER:	02 D + B NUMBER:
STREET ADDRESS (P.O. Box, RFD#, etc.):	03 STREET ADDRESS (P.O. Box, RFD#, etc.):
04 SIC CODE:	04 SIC CODE:
CITY: Verona	05 CITY:
06 STATE: PA	06 STATE:
07 ZIP CODE:	07 ZIP CODE:

NAME:	01 NAME:
02 D + B NUMBER:	02 D + B NUMBER:
STREET ADDRESS (P.O. Box, RFD#, etc.):	03 STREET ADDRESS (P.O. Box, RFD#, etc.):
04 SIC CODE:	04 SIC CODE:
CITY:	05 CITY:
06 STATE:	06 STATE:
07 ZIP CODE:	07 ZIP CODE:

NAME:	01 NAME:
02 D + B NUMBER:	02 D + B NUMBER:
STREET ADDRESS (P.O. Box, RFD#, etc.):	03 STREET ADDRESS (P.O. Box, RFD#, etc.):
04 SIC CODE:	04 SIC CODE:
CITY:	05 CITY:
06 STATE:	06 STATE:
07 ZIP CODE:	07 ZIP CODE:

[V.] SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Preliminary Assessment Report of Autotronic Products, EA Science and Technology, March 24, 1986.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

1. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	D981184211

II. CURRENT OPERATOR(S) / OPERATOR'S PARENT COMPANY (If applicable)

01 NAME		02 D + B Number	10 NAME		11 D + B NUMBER
Autotronic Products					
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)		13 SIC CODE
3300 Lawson Blvd.					
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
Oceanside	NY	11572			
08 YEARS OF OPERATION	09 NAME OF OWNER				
8	J. Spadafina				

III. PREVIOUS OPERATOR(S) (List most recent first: Provide only if different from owner) / PREVIOUS OPERATOR'S PARENT COMPANIES (If applicable)

01 NAME		02 D + B Number	10 NAME		11 D + B NUMBER
Autotronics Inc.			Union Corporation		
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)		13 SIC CODE
3300 Lawson Blvd.					
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
Oceanside	NY	11572	Verona	PA	
08 YEARS OF OPERATION	09 NAME OF OWNER				
Approx. 17	Union Corporation				
01 NAME		02 D + B Number	10 NAME		11 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				
01 NAME		02 D + B Number	10 NAME		11 D + B NUMBER
03 STREET ADDRESS (P.O. Box, RFD#, etc.)		04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD#, etc.)		13 SIC CODE
05 CITY	06 STATE	07 ZIP CODE	14 CITY	15 STATE	16 ZIP CODE
08 YEARS OF OPERATION	09 NAME OF OWNER				

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Preliminary Assessment Report of Autotronic Products, EA Science and Technology, March 24, 1986.

1. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D981184211

ON-SITE GENERATOR

NAME	02 D + B NUMBER
Autotronic Products	

STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
3300 Lawson Blvd.	--

CITY	06 STATE	07 ZIP CODE
Oceanside	NY	11572

OFF-SITE GENERATOR(S)

NAME	02 D + B NUMBER	01 NAME	02 D + B NUMBER
STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE

CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

NAME	02 D + B NUMBER	01 NAME	02 D + B NUMBER
STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE

CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

TRANSPORTER(S)

NAME	02 D + B NUMBER	01 NAME	02 D + B NUMBER
Chemical Pollution Control			
STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
120 South Fourth Street			

CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
Bay Shore	NY	11706			

NAME	02 D + B NUMBER	01 NAME	02 D + B NUMBER
Pride Solvents			
STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD#, etc.)	04 SIC CODE
78-88 Larmar Street			

CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
W. Babylon	NY	11704			

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Chemical/Solvent Waste Report for Autotronic Products, Shipped by Pride Solvents, November 26, 1984.
Chemical/Solvent Waste Report for Autotronic Products, Shipped by Chemical Pollution, June 7, 1985.

PAST RESPONSE ACTIVITIES

A. WATER SUPPLY CLOSED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

01 D. SPILLED MATERIAL REMOVED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

01 E. CONTAMINATED SOIL REMOVED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

F. WASTE REPACKAGED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

G. WASTE DISPOSED ELSEWHERE — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

Waste is now properly stored, and it is hauled off site on an as-needed basis by licensed hazardous waste scavengers.

H. ON SITE BURIAL — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

I. IN SITU CHEMICAL TREATMENT — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

J. IN SITU BIOLOGICAL TREATMENT — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

K. IN SITU PHYSICAL TREATMENT — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

L. ENCAPSULATION — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

M. EMERGENCY WASTE TREATMENT — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

N. CUTOFF WALLS — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

P. CUTOFF TRENCHES/SUMP — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

Q. SUBSURFACE CUTOFF WALL — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D981184211

PAST RESPONSE ACTIVITIES

R. BARRIER WALLS CONSTRUCTED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

S. CAPPING/COVERING — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

T. BULK TANKAGE REPAIRED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

U. GROUT CURTAIN CONSTRUCTED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

V. BOTTOM SEALED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

W. GAS CONTROL — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

X. FIRE CONTROL — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

Y. LEACHATE TREATMENT — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

Z. AREA EVACUATED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

1. ACCESS TO SITE RESTRICTED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

2. POPULATION RELOCATED — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

3. OTHER REMEDIAL ACTIVITIES — 02 DATE: ______ 03 AGENCY: ______
DESCRIPTION

No previous history.

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Preliminary Assessment Report of Autotronic Products, EA Science and Technology, March 24, 1986.
Telecon Note: Conversation between Joe Schecter, Nassau County Division of Health, and William Schnitzerling, NUS Corp., August 5, 1987.
Telecon Note: Conversation between Rocky Piaggione, New York State Department of Environmental Conservation, and William Schnitzerling, NUS Corp., August 5, 1987.
Field Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corporation Region 2 FIT, Edison, New Jersey, September 3, 1987.

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	D981184211

II. ENFORCEMENT INFORMATION

PAST REGULATORY/ENFORCEMENT ACTION X YES _ NO

DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

Autotronic Products was fined $1,000 by the NYSDEC for illegally disposing of 1,1,1-trichloroethane in the back of its property between 1981 and 1982. Since this practice ceased in 1982, Autotronic Products has been in compliance with its state and county hazardous waste management permits.

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, report)

Preliminary Assessment Report of Autotronic Products, EA Science and Technology, March 24, 1986.
Telecon Note: Conversation between Joe Schecter, Nassau County Division of Health, and William Schnitzerling, NUS Corp., August 5, 1987.
Telecon Note: Conversation between Rocky Piaggione, New York State Department of Environmental Conservation, and William Schnitzerling, NUS Corp., August 5, 1987.
Field Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corporation, Region 2 FIT, Edison, New Jersey, September 3, 1987.
NYSDEC Memorandum: From Rocky J. Piaggione, to Al Machlin, Subject: Autotronic Products Inc., May 23, 1983.

SECTION 3

MAPS AND PHOTOGRAPHS

MAPS

AUTOTRONIC PRODUCTS
OCEANSIDE, NEW YORK

Contents

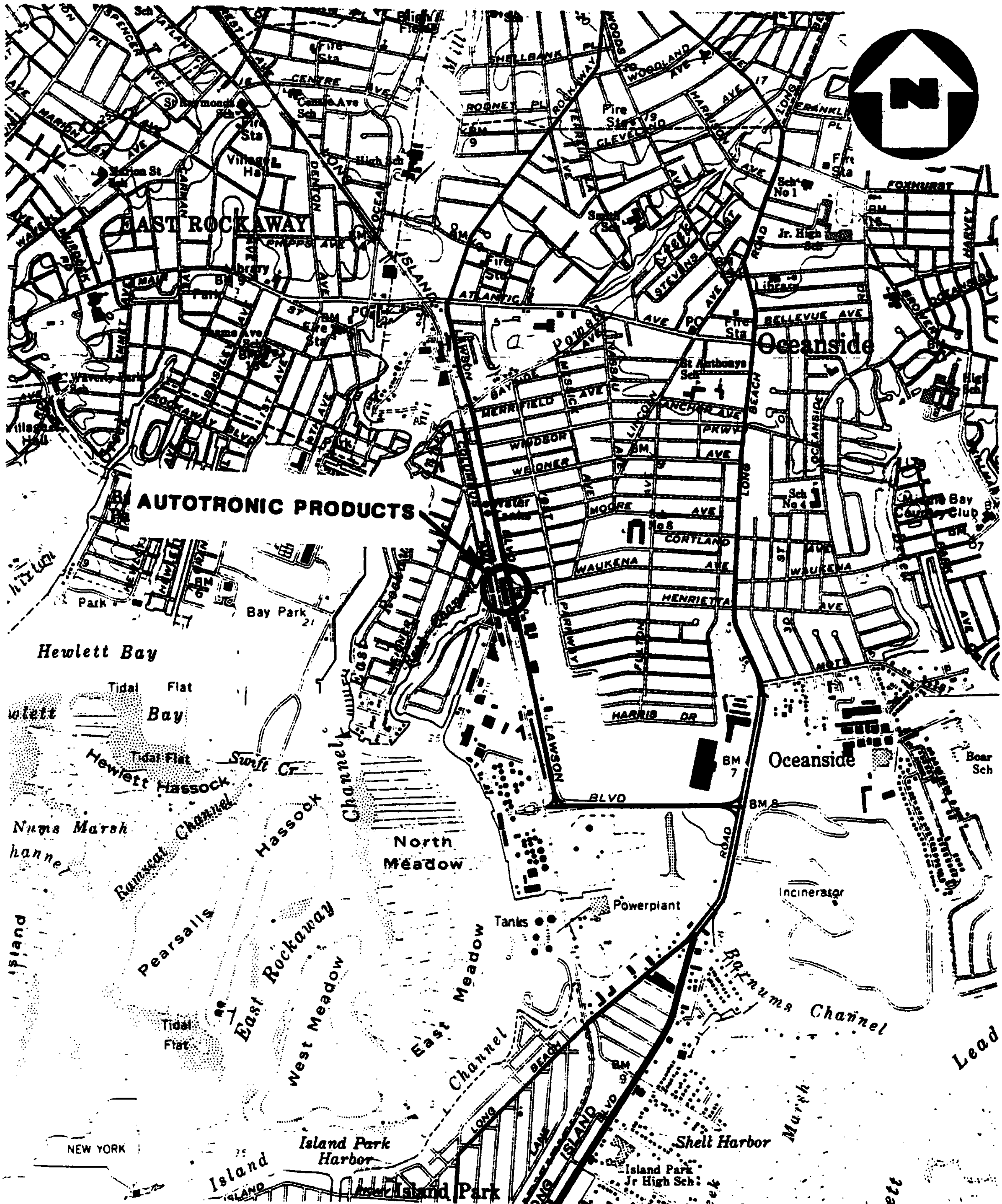


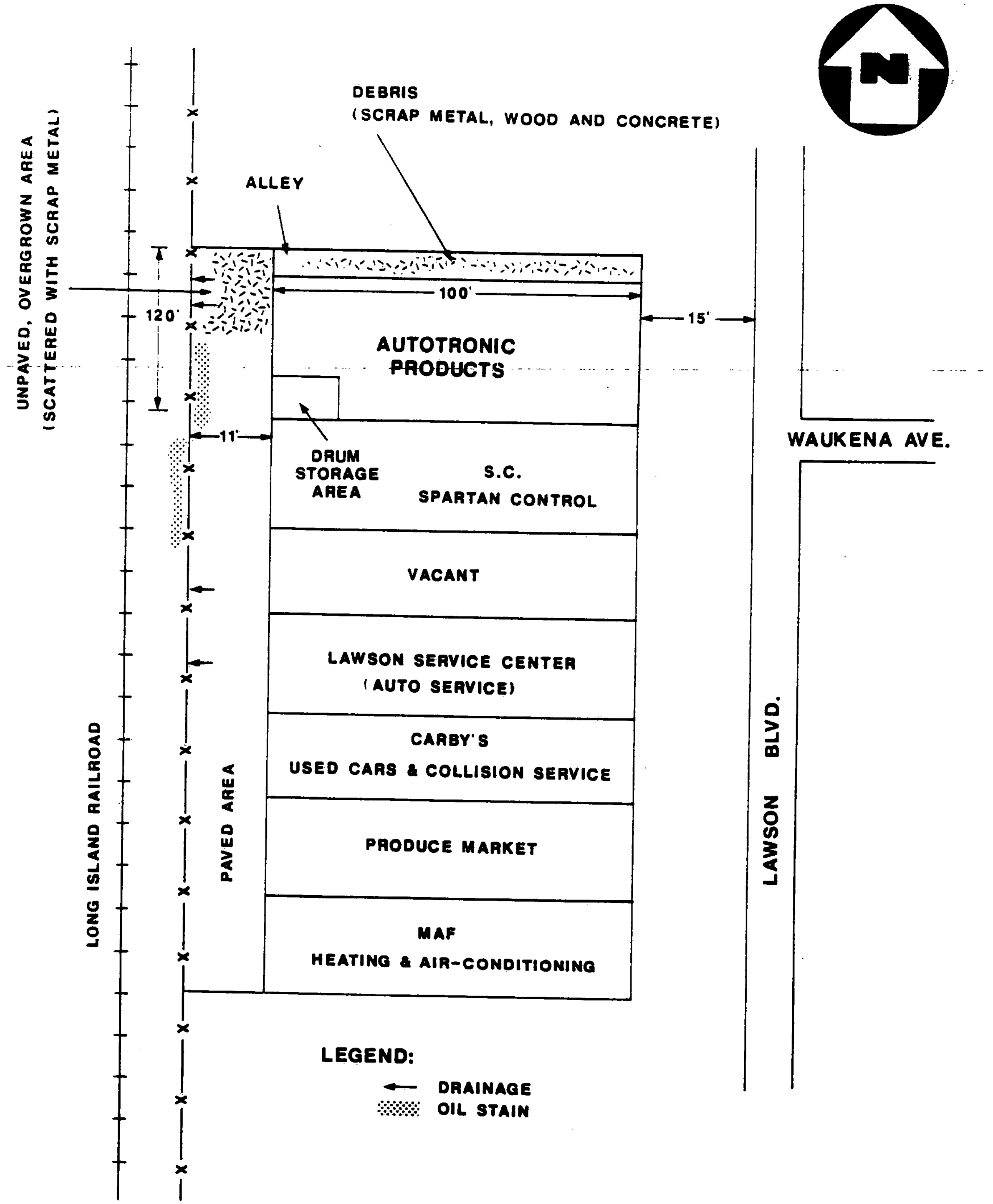
FIGURE 1

SITE LOCATION MAP

AUTOTRONIC PRODUCTS, OCEANSIDE, N.Y.

SCALE: 1" = 2000'

NUS CORPORATION



SITE MAP
AUTOTRONIC PRODUCTS, OCEANSIDE, N.Y.
(NOT TO SCALE)

FIGURE 2
NUS CORPORATION

SECTION 4

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS AND RECOMMENDATIONS

Between 1981 and 1982, Autotronic Products illegally dumped less than 50 gallons of 1,1,1-trichloroethane in 1-quart batches on the pavement in the rear of the facility. It is not known if the waste evaporated or ran off the pavement onto the adjacent property owned by the Long Island Railroad. Autotronic Products now operates under strict permits issued by the NYSDEC and NCHD and was found to be in compliance as of March 2, 1987.

A recommendation of **NO FURTHER REMEDIAL ACTION PLANNED** under CERCLA/SARA is given for the Autotronic Products site. This recommendation is based on the following information that was acquired during the site inspection and subsequent report preparation:

- There was a small quantity of hazardous waste released during a limited period of time. This practice was discontinued and Autotronic Products now employs proper waste management practices.
- There is no surface water intake used for potable or irrigation purposes within 3 miles downstream of the site.
- The 1,1,1-trichloroethane was released on a paved surface in small quantities, and the depth to the aquifer of concern is 500 feet. There is little likelihood of migration of contaminants to the source of potable water.
- Since proper waste management practices are now employed and the site is secure with access limited to authorized personnel, there is no threat of direct contact with hazardous waste.

SECTION 5

BIBLIOGRAPHY OF INFORMATION SOURCES

BIBLIOGRAPHY OF INFORMATION SOURCES

1. Preliminary Assessment Report of Autotronic Products, E.A. Science and Technology, March 24, 1986.

2. Field Notebook No. 0133, Autotronic Products, TDD No. 02-8708-02, Site Inspection, NUS Corporation Region 2 FIT, Edison, New Jersey, September 3, 1987.

3. U.S. Geological Survey, Hydrogeology of the Town of North Hempstead, Nassau County, Long Island, New York. Long Island Water Resources Bulletin 12, 1979.

4. Kimmel, Grant E., et al. Analog model prediction of the hydrologic effects of sanitary sewerage in southeast Nassau and southwest Suffolk Counties, New York, Long Island Water Resources Bulletin LIWR-6, 1977.

5. Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.

6. Telecon Note: Conversation between Rocky Piaggione, Attorney for the Enforcement Division, New York State Department of Environmental Conservation, and W. Schnitzerling, NUS Corporation, August 5, 1987.

7. Telecon Note: Conversation between Joseph Schechter, Nassau County Health Department, and W. Schnitzerling, NUS Corporation, August 5, 1987.

8. New York State Department of Health, New York State Atlas of Community Water System Sources, 1982

9. Three Mile Vicinity Map based on U.S. Department of the Interior Geological Survey Topographic Maps, 7.5 minute series, Quadrangles of "Lynbrook, NY," "Lawrence, NY," and "Freeport, NY," 1969.

10. N.Y. State Department of Environmental Conservation, Wildlife Resource Center, "Significant Coastal Fish and Wildlife Habitat, West Hempstead Bay," "Significant Coastal Fish and Wildlife Habitat, Middle Hempstead Bay," and "Significant Coastal Fish and Wildlife Habitat, Nassau Beach," Delmar, New York, 1987.

11. General Sciences Corporation, Graphic Exposure Modeling NUS Corporation System (GEMS) Landover, Maryland, September, 1987.

12. Chemical, physical, and biological properties of compounds present at hazardous waste sites. Final report prepared for the U.S. Environmental Protection Agency, Clement Associates, Inc., September 1985.

13. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Hempstead, NY, Community Panel No. 3604670051B, 1985.

14. U.S. Department of Agriculture, Soil Conservation Service, Prime Farmland of New York, August 1979.

15. Letter from Joseph M. Spadafina, President, Autotronic Products, to Mr. Schaefer, Nassau County Department of Health, June 24, 1987.

BIBLIOGRAPHY OF INFORMATION SOURCES (Cont'd)

16. Project Note: W. Schnitzerling, NUS Corp., to Autotronic Products File, Subject: Groundwater usage near site, September 4, 1987.

17. Telecon Note: Conversation between Don Myott, Nassau County Health Department, Pure Waters Division, and S. Shulfer, NUS Corp., May 10, 1988.

18. Atlantic Coast Ecological Inventory, New York, NY-Conn-NJ, U.S. Fish and Wildlife Service, 1980.

19. NYSDEC Memorandum: From Rocky J. Piaggione to Al Machlin (both of NYSDEC), Subject: Autotronics, Inc., May 23, 1983.

20. Chemical/Solvent Waste Report for Autotronic Products, Shipped by Chemical Pollution, June 7, 1985.

21. Chemical/Solvent Waste Report for Autotronic Products, Shipped by Pride Solvents, November 26, 1984.

22. Chemical/Solvent Waste Report, Bureau of Land Resources Management, Nassau County Health Department Permit Number 295.

23. Nassau County Department of Health, Solid Waste Management Facility Permit, Permit Nos. 109, February 6, 1984, and 295, February 7, 1985.

24. Soren, Julian. Results of subsurface exploration in the mid-island area of Western Suffolk County, Long Island, New York. Long Island Water Resources, Bulletin No. 1, 1971.

SECTION 6

BACKGROUND INFORMATION

REFERENCE NO. 1

Autotronic Products

EPA

Potential Hazardous Waste Site

Preliminary Assessment

PA I
New Site Discovery

FILE COPY

COMPLETED

FILE COPY

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE: NY
02 SITE NUMBER: New

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site): Autotronic Products

02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: 3300 Lawson Boulevard

03 CITY: Oceanside (Town of Hempstead)
04 STATE: NY
05 ZIP CODE: 11572
06 COUNTY: Nassau
07 COUNTY CODE:
08 CONG. DIST:

09 COORDINATES: LATITUDE 40° 37' 46." LONGITUDE 73° 39' 13."

10 DIRECTIONS TO SITE (Starting from nearest public road):
Site is located on the west side of Lawson Boulevard. Just north of the intersection of Lawson Boulevard and Waukena Boulevard.

III. RESPONSIBLE PARTIES

01 OWNER (if known): Mr. Joseph M. Spadafina
02 STREET (Business, mailing, residential): 3300 Lawson Boulevard
03 CITY: Oceanside
04 STATE: NY
05 ZIP CODE: 11572
06 TELEPHONE NUMBER: (516) 536-6765

07 OPERATOR (if known and different from owner): Same as above
08 STREET (Business, mailing, residential):
09 CITY:
10 STATE:
11 ZIP CODE:
12 TELEPHONE NUMBER: ( )

13 TYPE OF OWNERSHIP (Check one):
X A. PRIVATE ☐ B. FEDERAL: ______ (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: ______ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply):
☐ A. RCRA 3001 DATE RECEIVED: __/__/__ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: __/__/__ (MONTH DAY YEAR) ☐ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION:
X YES DATE 1 /20 /86 (MONTH DAY YEAR)
☐ NO

BY (Check all that apply): ☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE X D. OTHER CONTRACTOR ☐ E. LOCAL HEALTH OFFICIAL ☐ F. OTHER: ______ (Specify)

CONTRACTOR NAME(S): EA Science and Technology

02 SITE STATUS (Check one): X A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN

03 YEARS OF OPERATION: 1981 (BEGINNING YEAR) early 1982 (ENDING YEAR) ☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED:
Onsite waste disposal of 1,1,1-trichloroethane occurred during 1981 and early 1982. Mr. Spadafina estimates that less than 50 gallons of TCE were dumped onto the paved blacktop surface behind the building during the period of time that dumping occurred.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION:
Soil contamination possible, which may warrant removal of soil. Possible ground-water contamination.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) X B. MEDIUM (Inspection required) ☐ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT: Rebecca Ligotino
02 OF (Agency/Organization): EA Science and Technology
03 TELEPHONE NUMBER: (914) 692-6706

04 PERSON RESPONSIBLE FOR ASSESSMENT: Stephen Barry
05 AGENCY:
06 ORGANIZATION: EA
07 TELEPHONE NUMBER: (914) 692-6706
08 DATE: 3 24 86 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	New

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- A SOLID
- B POWDER, FINES
- C SLUDGE
- D OTHER ______ (Specify)
- E SLURRY
- X F LIQUID
- G GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS ______

CUBIC YARDS ______

NO. OF DRUMS 1 (est.)

03 WASTE CHARACTERISTICS (Check all that apply)

- X A TOXIC
- B CORROSIVE
- C RADIOACTIVE
- X D PERSISTENT
- E SOLUBLE
- F INFECTIOUS
- G FLAMMABLE
- H IGNITABLE
- I HIGHLY VOLATILE
- J EXPLOSIVE
- K REACTIVE
- L INCOMPATIBLE
- M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	50	GA	estimated by current operator
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
SOL	1,1,1-Trichloroethane	71-55-6	OD	Unknown	

V. FEEDSTOCKS (See Appendix for CAS Numbers) Not applicable

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EA site inspection and interview, 20 January 1986.

New York State Department of Environmental Conservation, Bureau of Hazardous Site Control files.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: New

II. HAZARDOUS CONDITIONS AND INCIDENTS (continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE ________) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE ________) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (include name(s) of species)

None known.

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE ________) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills, Runoff, Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE ________) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: Unknown
04 NARRATIVE DESCRIPTION

Between 1981 and early 1982, an estimated 50 gallons of waste solvent was dumped on paved blacktop behind the facility.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE ________) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

None known.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE ________) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

The site slopes in the direction of the railroad tracks on the western boundary. Surface runoff would percolate through the soil or evaporate before any contamination would reach sewers or storm drains.

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE ________) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Between 1981 and early 1982 an estimated 50 gallons of 1,1,1-trichloroethane were illegally dumped on a paved blacktop surface behind the facility.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None known.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 45,000

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

References 7 and 8.
E. Site Inspection.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER
NY |

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: [illegible]
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☐ POTENTIAL ☐ ALLEGED

Ground water in the aquifer of concern within a 3-mile radius of the site is the source of water for the [illegible] Water Company [illegible] and the Village of Rockville Center.

01 ☐ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☐ POTENTIAL ☐ ALLEGED

There is no [illegible] surface [illegible] of the Autotronic Products, Inc. site. Surface runoff would appear to exit the site on the western boundary and percolate through the railroad bedding adjacent to the site. Therefore there is no potential for surface water contamination.

01 ☐ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☐ POTENTIAL ☐ ALLEGED

None known.

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☐ POTENTIAL ☐ ALLEGED

None known.

01 ☐ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☐ POTENTIAL ☐ ALLEGED

None reported.

01 ☐ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: Unknown (Acres)
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☒ POTENTIAL ☐ ALLEGED

The entire Autotronic Products property is paved. The only soil potentially contaminated is the railroad bedding. This soil, adjacent to the property had standing water on it during EA's site inspection 20 January 1986.

01 ☐ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: [illegible]
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☒ POTENTIAL ☐ ALLEGED

Limited to population served by ground water in the aquifer of concern within a 3-mile radius of the site.

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☐ POTENTIAL ☐ ALLEGED

None known.

01 ☐ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: ______
02 ☐ OBSERVED (DATE: ______)
04 NARRATIVE DESCRIPTION
☐ POTENTIAL ☐ ALLEGED

None known.

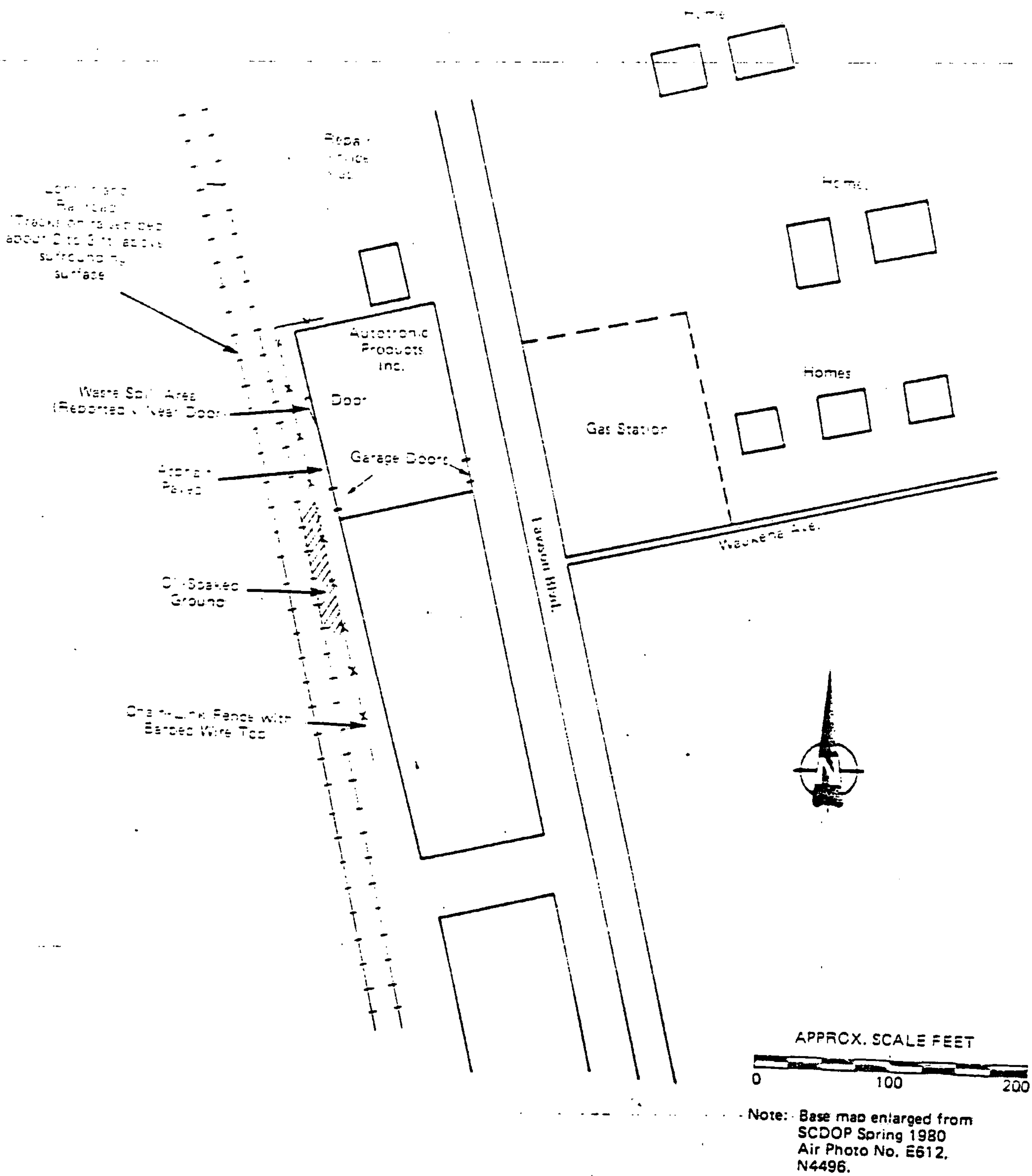


Figure 1-2. Site sketch, Autotronic Products, 20 January 1986.

1. EXECUTIVE SUMMARY

Autotronics Products

The Autotronic Products site (New York I.D. No. [illegible], EPA I.D. No. New) is an industrial site located at 3300 Lawson Boulevard just north of the intersection of Lawson Boulevard and Waukena Boulevard in Oceanside (Town of Hempstead), Nassau County, New York. Autotronic Products, Inc., owned and operated by Mr. Joseph M. Spadafina, is a business involved in the assembly of printed circuit boards. Mr. Spadafina purchased the operation in June 1982 from Union Corporation of Verona, Pennsylvania (the parent company of the firm Autotronic, Inc. which had been conducting business at 3300 Lawson Boulevard since 1975.)

The only reported violation at the site is the dumping of small amounts of 1,1,1-trichloroethane (TCE) on the ground behind the building. When investigated the practice was found to have been discontinued and the waste TCE was being stored in drums for subsequent removal. This onsite dumping of wastes is believed by the current owner to have occurred for an approximate 1-yr period during 1981 and early 1982. This corresponds to the period of time when some of the soldering operations began on site and when current waste handling procedures were implemented. The practice during this time was, on an occasional basis, to dump a small amount (approximately 1 quart) of residual TCE onto the paved blacktop surface behind the facility. Based on the amount of TCE currently used, Mr. Spadafina estimated that less than 50 gal total of solvent were dumped in this manner. Current procedures involve collecting wastes in 2 drums--one receiving residual TCE and flux removal, and the other receiving wastes such as acetone and paint thinners resulting from paint operations. These wastes are hauled away on an as-needed basis.

The preliminary HRS scores for this site are as follows: Migration Score (S_M) = 19.82; Direct Contact Score (S_{DC}) = 0. With a confirmed release of contaminants to the ground water, the maximum obtainable S_M is 21.23. There is no overland migration route to surface water for contaminants at the site. The existing data are inadequate to complete a final HRS score. Ground-water quality data are lacking.

In order to prepare a final HRS score, a Phase II study will be necessary to obtain samples of ground water for analysis. The proposed Phase II investigation will include geophysical studies (as possible), the installation of three test borings/monitoring wells, and the collection and analysis of ground- samples. The estimated cost of the proposed Phase II study is $41,980.

3. [illegible]

The Phase I investigation of the Autotronic Products site involved a site inspection by EA Science and Technology, as well as record searches and interviews. The following agencies or individuals were contacted:

Contact	Information Received
Mr. Joseph M. Spadafina, Pres. Autotronic Products, Inc. 3300 Lawson Boulevard Oceanside, New York 11572 (516) 536-6765	Site interview
Mr. Joseph Schecter/Mr. Bert Welch Nassau County Department of Health 240 Old Country Road Mineola, New York 11501 (516) 535-240[illegible]	Site file interview
Mr. Anthony Candela, P.E. Senior Sanitary Engineer New York State Department of Environmental Conservation Division of Solid Waste SUNY Campus - Building 40 Stony Brook, New York 11794 (516) 751-7900	No file/information
Mr. Frank Eye Chief Plant Operator Department of Water 1 West Chester Long Beach City, New York 11561 (516) 431-1000	Public water supply and distribution
Mr. Whiston, Superintendent Rockville Centre Water District 142 Maple Avenue Rockville Centre, New York 1157[illegible] (516) 766-[illegible]	Public water supply and distribution

REFERENCE NO. 2

NUS CORPORATION

II

0133

AUTOTRONIC PRODUCTS
Oceanside, New York
TDD# 02-8708-02
Project Manager: W. Schnitzerling
Logbook# 0133
August 19, 1987

C-330-8-34-123

GUIDANCE FOR PROPER USE OF LOG BOOKS

Purpose

- Serves to document onsite activities and be understandable to an outside reader.
- Provides the basis for later written reports.
- Used as an evidentiary document and may be used in legal proceedings.

Distribution

- Controlled by the project manager and distributed as appropriate to personnel designated by the project manager.

General Procedures

- Record information in language which is objective and factual.
- Use ink. Waterproof ink is recommended.
- Leave first two pages blank. They serve as space for the table of contents to be added when the log book is complete.
- The first written page identifies the date, time, TDD number, site name, location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- Start on a new page at the start of each day's field activities. This page should identify date, time, TDD number, site name and location, NUS personnel and their responsibilities, other non-NUS personnel and observed weather conditions.
- List all persons leaving or entering the site.
- Information recorded in the log book should be in chronological order.
- Sign and date each page, log all entries using a 24 hour clock. Entries should be time logged every 15 to 30 minutes.
- Corrections are to be lined through and initialed. No erroneous notes are to be made illegible.
- Include a sketch or map of the site which can be used to locate photo or sample locations. Note landmarks, indicate north, and if possible include an approximate scale. Include as many sketches and maps as necessary.
- A person not present when field activities were being documented should read each completed page, and countersign and date when satisfied that the written notes are understandable.

Specific Field Activities To Be Documented

- Record the who, what and where of field activities.
- Indicate sampling and photo locations on a site sketch or map.
- As part of the chain of custody procedure, recorded in-situ sampling information must include sample number, date, time, sampling personnel, sample type, designation of sample as a grab or composite, and any preservative used.
- Information for in-situ measurements must include a sample ID number, the date, time, and personnel taking measurements. Pertinent in-situ measurements include but are not limited to pH, temperature, conductivity, flow measurements, continuous air monitoring measurements, and stack gas analysis. If infield calculations are necessary they must be checked and signed by a second team member.
- Create a photo log to document photos taken in the field. These must include date, time, photographer, sample number, roll number, frame number, photo ID number and description. Indicate if the film is for slides or prints in the column for roll number. Photo ID numbers can be added at the time the photo log is assembled.
- Record onsite health and safety measures used. Describe observed potential hazards to health and safety. Document the level of protection used, decontamination procedure used and specific decontamination solutions.
- When sampling is complete, a summary log is to be completed. It must include date, time, sample number, description, field book reference page, and the number and date of the chain of custody form on which the sample is listed. Indicate whether or not the sample was split.
- Record details regarding relevant information obtained during onsite interviews. Include names of persons interviewed, the interest group represented, their address and phone number.
- Record any other relevant information which would be difficult to generate at a later date.

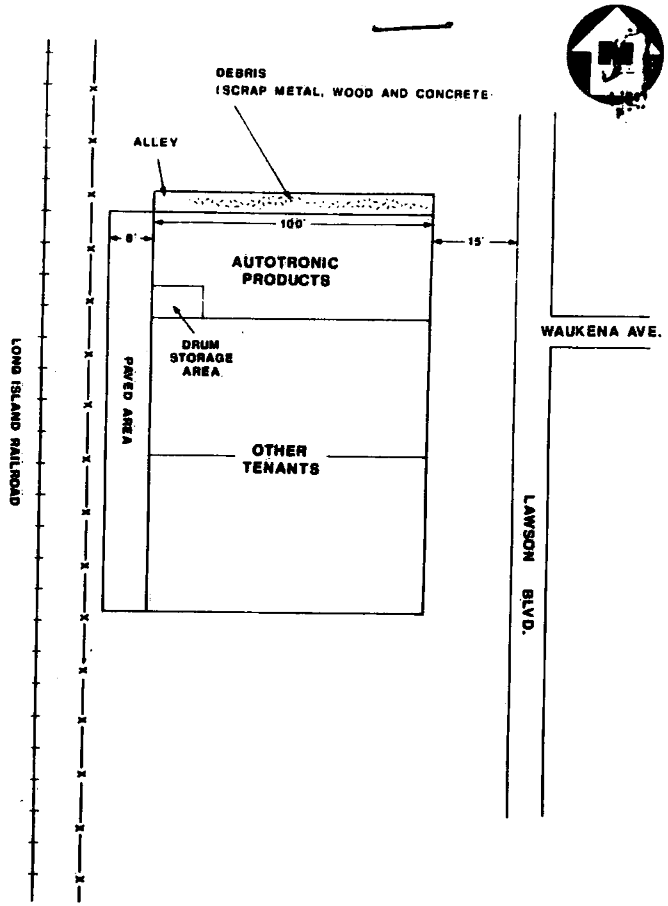
Date 9/7/84
Reviewed/Approved JaR

Table of Contents
Autotronic Products - 03 570507
6/10/3/87 - NYW 3:II

Description	Page
Meeting about site + possible hazards	4-5
Arrival at site, Site Inspection, Desc. of surrounding [illegible]	5-12
Interview with Dori Myatt Nassau County Health Dept. Fire Waters Division	13

9/10/87 The camera's malfunctioned at the site, No pictures turned out

William [illegible] 9/3/87
Beth Torpey 9/7/87



SITE MAP
ITOTRONIC PRODUCTS, OCEANSIDE, N.Y.
(NOT TO SCALE)

FIGURE 2
NUS CORPORATION

Autotronic Products produces small electronic parts for The US Government. This facility is closely monitored by the Nassau County Health Department and the New York State Department of Environmental Conservation

09/09/87
Beth Torpey 9-7-87

TDD # 02-8705-07

09/05/87

Weather AT SITE
Sunny 75°
Wind(#5°) 8mph
N. 14

Autotronic Products
Oceanside NY
Nassau County

0615 Arrive at NUS, Edison NJ
met Brian Pedersen
John Ducar
began to load trucks, sign out (and check) Air monitoring equipment, sign out cameras and film, and check for drager tubes.

0645 Leave NUS with equipment
(did not bring tubes)

0715 Traffic IN Staten Island

0750 Accident on the Narrows Bridge

0820 Sunrise Highway backed up due to construction

0910 Arrive ON site

09:15 NUS personnel on site
Brian Pedersen SSO
John Ducar APM
W Schnitzerling PM
OVA and HNU are started

[signature] 09/05/87 Beth [signature] 9-7-87

0917 Site Safety Meeting
attended by
Brian Pedersen [signature]
John Ducar [signature]
W Schnitzerling [signature]

Discussed the possible hazards on this site (TCE or TCA), and discussed the physical hazards (scrap metal seen on side of building).

0925 NUS Personnel will do a reconn of back yard with Latex booties, Surgical gloves and escape packs, as outlined in the ~~I~~ safety plan. Any hits will result in NUS personnel vacating the property and putting on SCBA units.

0930 Met Mr Spadafina site contact

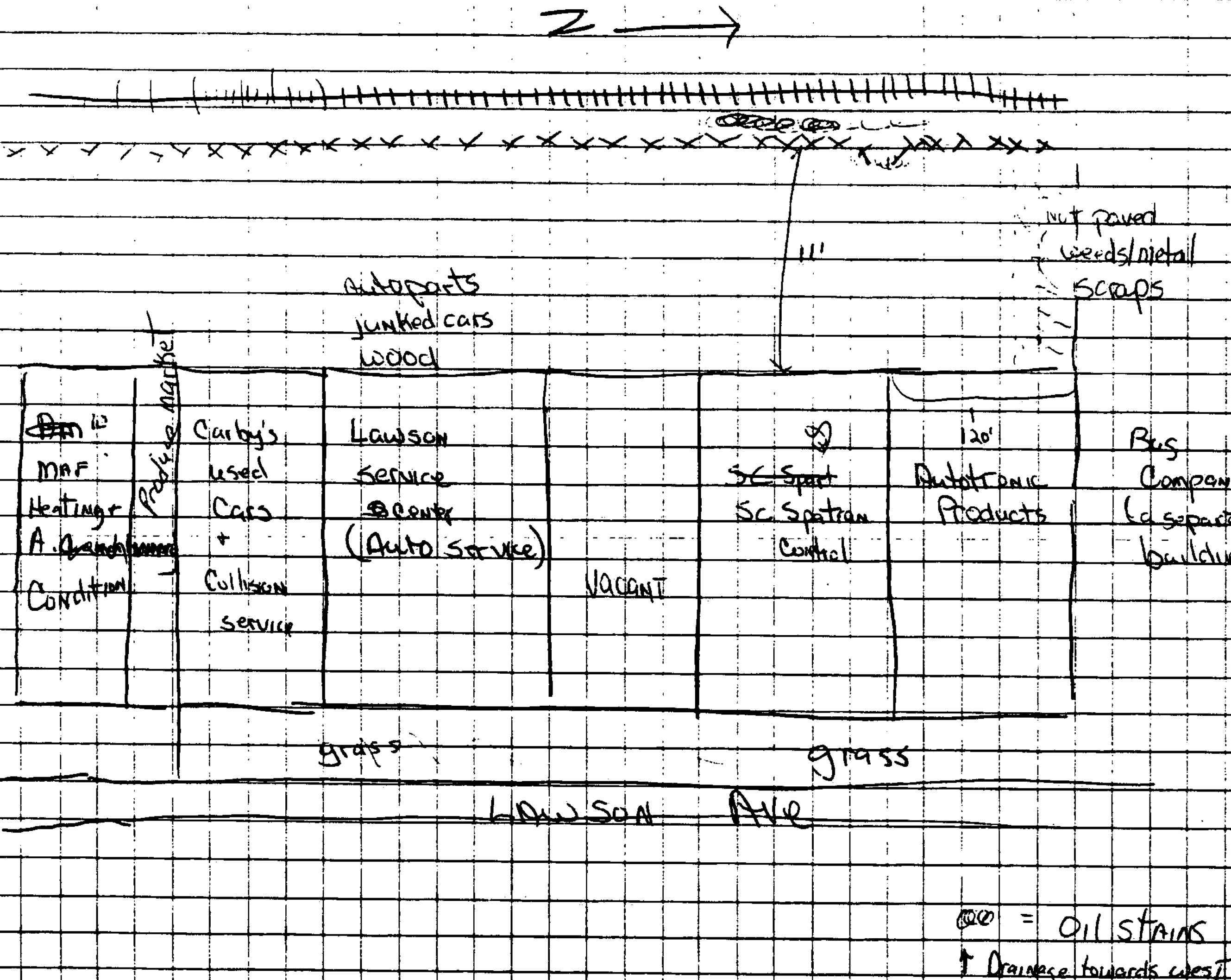
Equipment Serial Numbers

OVA	307137	(F)	
HNU	469748	(L)	
SCBA Escape Pack	192379		J Ducar
SCBA Escape Pack	192385		B Pedersen
SCBA Escape Pack	192094		W Schnitzerling
Mini Rad	469786		

- ~~NHa~~ HNU and OVA functioning properly

0935 Mr Spadafina states that 1,1,1, Trichloroethane was used by Autotronics (NOT TCE)

[signature] 09/03/87 Beth Torpey 9-7-87



Beth Torpey 9-7-87

09/03/87

0940 ~~M~~ Mr Spadafina brought us into the back of the property and showed us where the ~~TCA~~ was dumped

0940 OVA reading 5 ppm in building (warehouse)
OVA " ~~.~~ .5 outside by door
(readings taken while walking through the warehouse
OVA reading Right of door ~~2~~.5 ppm
OVA reading 0 outside near fence
HNU No readings

0943 Mr ~~Spad~~ Spadafina leaves to take care of other ~~bus~~ business

0945 OVA no detection from outside
OVA detection of 5ppm inside building (again, to recheck earlier reading)
HNU NO Readings

0950 - No Readings from HNU or OVA from the drain pipes from the roof of building

0952 Description of Site
The ~~si~~ site where the dumping took place is a small area 11' wide x 120' length
The back paved area is common to all the tenants, there is a very slight slope to the left (which is west)

10 00 picture 1 facing North from South boundary of property

[signature] 09/03/87 Beth [signature] 9-7-87

1000 No readings off puddle (small) in back off property (using HNU + OVA)

10:02 Picture 2 facing North of weeded area of site
(NO Reading ON HNU or OVA)

Picture 3 facing South - looking at site

1003 Picture 4 looking at waste drum of Trichloroethane (Properly sealed)
Pictures 5-8 of paved area in back of site

1005 No reading HNU / OVA

1010 No readings ~~At~~ HNU / OVA

The back of this property is a narrow pavement. There are black stains in the fence line. In the northern section of this strip ~~there~~ there are weeds and poison ivy. These weeds also run on the Fenceline. In the weeds (in the north section of the backyard) there are metal scrap and rusted equipment all thru the area. Brian got no hits from this area, on Either the HNU or OVA.
The property outside the fence is RR property owned by the Long Island RR. The rock gravel Fill is ~~red~~ rusted colored (from the rusted RR tracks).

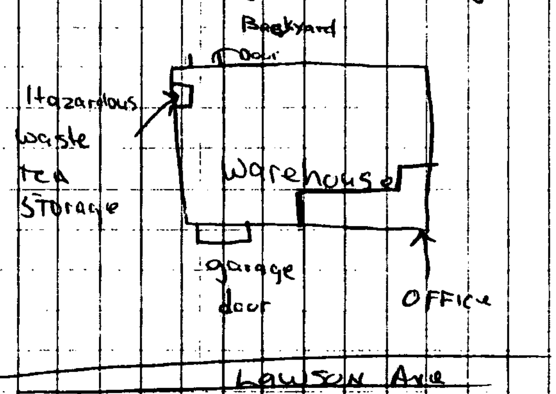
[signature] 09/03/87 Beth Torpey 9-7-87

~~10~~ 1015 NO Reading from HNU or OVA
The soil across the fence and
near the rock gravel is black stained
This stain extends ~~to~~ from the southern
boundary of Autotronics to the Auto Shop
The Auto shop has several junked cars,
auto parts and wood dumped
on the pavement behind the building.

1020 The area behind the northern
~~sec~~ section of the backyard is
also stained black.
The backyard is upgradient from this
stained soil, so are the RR tracks
runoff could occur from either source (the
tracks or ~~the~~ Autotronic Products)

1025 Inside Autotronics

The TCA is stored on a pallet, in a closed drum
Near the back door. This door is
constantly locked. There is 1 drum (# 277.9C) of TCA
Mr Spatafina says it is over a year old



W. Ospitalny 09/03/87 Beth Torpey 9-7-87

10 25 Picture #1 of warehouse
1030 Site history
Mr Spadafina said this
building was built in sections
the first section was
erected in 1951. The owner of
the property at that time ~~was~~ is
unknown
The Union Corp bought the
building in 1965,
Mr Spadafina bought ~~it~~ the building/operation
from Union Corp.
as far as Mr Spadafina knowes
this building was always
used to manufacture small electrical
components

– NO Readings ON HNU or OVA

Mr Spadafina estimates 50 gallons
of TCA were dumped during 1981-1982
An employee would take the waste
TCA and throw it out the back
of the ~~property~~ warehouse.

Currently the use of TCA
is limited, because of
business slow down and
change of production
process.
Mr Spadafina said ~~there~~
Autotronics has not purchased
new TCA in over a year and
There is still 1/2 a drum of

[signature] 09/03/87

11

TCA left from the last purchase. Because of this Autotronics has not disposed of any TCA in over 1 year.

- The TCA is used to scrub off flux from printed circuit boards

- all workers have access to the Hazardous Waste ~~HW storage~~ storage area because it is ~~(in the open)~~ in the warehouse

1035 Mr Spadafina - told me the TCA was dumped in approximately 1qt batches (they only cleaned 1 circuit board at a time).
The practice ~~was~~ (of dumping waste) was exposed when the employee who dumped it was laid off. He reported the incidents to the EPA.
Mr Spadafina was fined $1000.00 for these dumpings
(Eventually the employee was fired for unrelated reasons).

1040 No readings on OVA, HNU, or mini rad.
Area is 1200 sq ft.
spill containment is a small step to get out door.
- Picture 10 + 11 - the back of the property
- The hazardous chemicals are ~~not~~ stored next to the waste drum. Currently there are no hazardous chemicals on this site

09/03/87 Beth Torpey 9-7-87

1050 20 people (On the average work at Autotronics)
- There are no chemicals (hazardous on site)

1100 - Packing truck to leave site
- Samples were not taken during this SI

11 15 leave site, will drive to Surface water to investigate possible contamination routes

11 45 Found Landfill ~~out~~ at the End of Lawson ~~Blvd~~ Ave, Surface water running towards Autotronics is appears very dirty

12 15 Heading to Nassau County Health Department to speak to Don Myott

1 30 Arrive at NCHD

2 10 Leave NCHD after speaking to Don Myott - of Nassau Bureau of Public Water
(NCHD = Nassau County Health Department)

- Mr. Myott works in the NCHD - Public Waters Division
- People in this area use surface water for recreation (swimming, boating and fishing within 3 miles of this site) There are no drinking water intakes from surface water in this area

[signature] 09/03/87 Beth Toupey [signature] 9-7-87

9/05/87 - followup of interview
with D. Myott
He stated the closest
Drinking Water Well was 2.5
miles from the Site, (he had
estimated this figure) He
was wrong. The closest ~~wal~~ (as) drinking water
well is 1.5 miles from the site.
This well serves Rockville Centre
village, and the latest population
estimates for this village are "is" 29,000. (The old estimate is 25,000,
from the NY Atlas of Community
Water Systems).

Beth Rorpey 9-7-87

07/03/87

REFERENCE NO. 3

LONG ISLAND WATER RESOURCES
BULLETIN 12

HYDROGEOLOGY OF THE TOWN OF NORTH HEMPSTEAD, NASSAU COUNTY, LONG ISLAND, NEW YORK

Prepared by the
U.S. GEOLOGICAL SURVEY

in cooperation with the
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

Published by
NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS

1979

The correlation of stratigraphic units of Pleistocene and Cretaceous a on Long Island involves the correlation of (a) Pleistocene deposits referre to as the Gardiners Clay and Jameco Gravel, and (b) Cretaceous deposits, wi deposits of similar age in New Jersey. For example, recent studies by Sirk (1974) have indicated that deposits included in the Raritan Formation on Lo Island may be equivalent in part to those included in the Magothy Formation in New Jersey. Because hydrogeologic units do not need to be equivalent to stratigraphic units, questions as to stratigraphy and correlation of these deposits are not discussed further in this report. Additional information on this subject is given in the reports mentioned in the section "Previous Investigations."

The division of the sedimentary sequence into separate hydrogeologic units that together form the ground-water reservoir underlying the Town of North Hempstead is essentially the same in this report as in works by Swarzenski (1963) and Isbister (1966). Many of the correlations of well-drillers' logs used in this study are the same as those made by Swarzenski (1963) and Isbister (1966); therefore, this report could in some respects be considered an updating of these earlier studies.

Swarzenski (1963, p. 32) considered the Lloyd Sand Member of the Rarit Formation (Lloyd aquifer) and the Jameco Gravel (Port Washington aquifer) to be hydrologically connected and to form what was at that time called the dee confined aquifer (tables 2 and 3). He regarded the lower limit of the aqui as the bedrock surface and the upper limit as the clay member of the Raritan Formation (Raritan clay) and the Gardiners Clay (Port Washington confining unit). The premise that the two units are hydrologically connected is not questioned in this report. (See pl. 3, sections C-C' and D-D', and pl. 4, section E-E'.)

The Port Washington and Lloyd aquifers and the Port Washington confinin unit and Raritan clay are treated as four distinct hydrogeologic units in this report because (1) this approach will facilitate future studies of the hydrology of each unit as a whole, and (2) the individual units may have different hydraulic characteristics as a result of their separate origin. The reasons why new hydrogeologic names have been proposed in this report for the Jameco Gravel and Gardiners Clay of Swarzenski (1963) are given in the sections "Port Washington aquifer" and "Port Washington confining unit."

Hydrogeologic Units

BEDROCK

Bedrock of Lower Paleozoic and(or) Precambrian age underlies all of western Long Island (Fisher and others, 1962). The bedrock generally consists of schist and gneiss and contains many igneous intrusions; its upper part is deeply altered by weathering (Perlmutter, 1949, p. 13). The zone of decay commonly consists of red, gray, yellow, white, green, or mottled colored clay, or sandy clay with partly decayed rock and mineral fragments

(Perlmutter, 1949, p. 13). If good core samples are available, a definite downward gradation from an almost pure clay to "sound" rock can be observed. Decayed bedrock samples are characterized by angular and ragged crystals of quartz, garnet, biotite, amphibole, feldspar, and their altered equivalents. The weathered zone ranges from 0 to more than 67 feet in thickness and may be locally absent as a result of erosion.

Eighteen of the 34 wells that have been drilled into bedrock in the Town of North Hempstead probably penetrated weathered bedrock. Most drillers' logs describe the bedrock as being composed of blue, brown, gray, or multicolored clay, sandy clay, or sand and clay. The clay is usually described as being "tough" and occasionally containing stones or boulders. Without indicative cores or rock samples, weathered bedrock cannot be reliably distinguished, nor can the precise top of the weathered bedrock zone be determined.

The altitude and configuration of the bedrock surface in the Town of North Hempstead are shown in figure 2. The bedrock surface dips 62 ft/mi southeastward and ranges from 166 feet below sea level along the north shore to more than 900 feet below sea level in the southeast part of the Town of North Hempstead. The configuration of most of the bedrock surface may be attributed to fluvial erosion before Late Cretaceous time; the configuration of the bedrock surface in the north half of Great Neck and Manhasset Neck may have been locally affected by glacial and fluvial erosion during Pleistocene time. Available well data are sufficient to define only the general structural trend of the bedrock surface in the North Hempstead area.

Bedrock is generally regarded as the base of the ground-water reservoir on Long Island because of its density and low permeability. No wells in the Town of North Hempstead are known to obtain water from bedrock; it is possible, however, that joints and fractures in the bedrock could provide yields sufficient for some domestic supplies.

LLOYD AQUIFER

The Lloyd aquifer is the equivalent of the Lloyd Sand Member of the Raritan Formation of Late Cretaceous age (Cohen and others, 1968, p. 18). The Lloyd deposits overlie bedrock and are overlain by the Raritan clay. The inferred extent, altitude, and configuration of the top of the Lloyd aquifer in the Town of North Hempstead are shown in figure 3. The lithologic composition, as indicated by drillers' logs and lateral relationships of the aquifer, are shown on plates 2 to 4, the locations of the sections are shown on plate 1 and in figure 3.

The Lloyd aquifer consists of discontinuous layers of gravel, sand, sandy clay, silt, and clay. As determined from the best available samples, the sand and gravel beds are composed of yellow, white, and gray quartz and contain minor amounts of chert and other stable minerals. The quartz grains are angular to subrounded, and the beds contain varying amounts of interstitial clay. White, gray, and buff silt and clay lenses are common. Thin lenses and scattered particles of lignite also occur.

Drillers usually describe the Lloyd sediments in the Town of North Hempstead as consisting of white and, occasionally, light-gray to dark-brown coarse sand and gravel or grit, with some interbedded fine to medium sand and clay. The clay is usually described as brown or gray but may occasionally be described as white, pink, red, or multicolored.

The Lloyd aquifer, as inferred from available data, may locally consist of either a unit composed largely of sand and gravel, as shown on the log of well N 24 (pl. 2, section B-B') or as a unit that consists of a lower sand and gravel sequence and a finer grained sequence above. The two units are separated by a thin, clayey zone, as shown on the log of well N 8477 (pl. 4, section E-E'). The clay zone generally consists of from one to three clay beds that cannot be correlated reliably over any great distance.

Drillers' logs indicate that the upper, finer grained sequence commonly consists of beds of sandy clay and fine to medium sand that generally contain thin beds of clay. Elsewhere, the logs indicate that the upper part may consist of gravelly clay, as shown on the log of well N 1958 (pl. 3, section D-D') or sand and gravel.

By the end of 1975, 20 wells had penetrated the full thickness of the Lloyd aquifer. The average thickness of the aquifer, as determined from drillers' logs, is 132 ft but ranges in thickness from 0 to more than 200 ft (fig. 4).

The top of the Lloyd aquifer decreases in altitude southeastward from 155 ft below sea level in the Great Neck area to more than 650 ft below sea level in the southeast corner of the Town. (See fig. 3.)

The Lloyd is a major aquifer in the Town of North Hempstead and is the source of water for 15 public-supply wells. The aquifer is probably hydraulically continuous with the adjacent Port Washington aquifer and the upper glacial aquifer in the Great Neck and Manhasset Neck areas. Water in the Lloyd aquifer is confined under artesian pressure beneath the Raritan clay.

Well yields during test pumping of large-capacity public-supply wells screened in the Lloyd aquifer have ranged from 510 gal/min to as much as 1,600 gal/min. The specific capacities of these wells range from 6 to 31 gal/min per foot of drawdown.

RARITAN CLAY

The Raritan clay is a distinct hydrogeologic unit that extends throughout much of the Town of North Hempstead (fig. 5). In this area the Raritan clay may be equivalent to the unnamed clay member of the Raritan Formation of Late Cretaceous age. The clay overlies the Lloyd aquifer and is in turn overlain by the Magothy aquifer. The composition and relationship of the Raritan clay to other hydrogeologic units is shown in tables 2 and 3 and plates 2 to 4.

The thickness of the clay, as determined from drillers' logs, ranges from 20 ft to 195 ft; within the Town of North Hempstead it is inferred to range from 0 to about 200 ft (fig. 6).

The Raritan clay consists mainly of clay and varying amounts of silt and sand. It is variously described as light to dark gray with beds of red, white, yellow, or mottled clay. Drillers have also noted sandy zones within the upper part of the clay. Core samples show that the clay may be laminated and may contain pyrite and lenses of lignite.

The Raritan clay is a significant hydrogeologic unit because it confines water in the underlying Lloyd aquifer. Although its hydraulic conductivity is very low, it does not entirely prevent movement of water between the Magothy and Lloyd aquifers. Some public-supply wells and other wells obtain part of their water supply from the sandy zones in the upper part of the Raritan clay.

MAGOTHY AQUIFER

The Magothy aquifer is composed of Upper Cretaceous sediments that overlie the Raritan clay. It is in turn overlain by deposits of Pleistocene age that form the upper glacial aquifer (pls. 2-4 and tables 2, 3).

The Magothy aquifer consists mainly of lenticular and discontinuous beds of very fine to medium sand, commonly clayey or containing thin clay lenses, that are interbedded with clay and sandy clay, silt, and some sand and gravel. Beds of coarse sand and gravel commonly occur in the lower 100 to 150 ft of the aquifer. This coarser zone may have been referred to in some reports as "basal Magothy." The sediments in the aquifer seem to grade upward from coarser grained at the base to finer grained at the top. The greater proportion of the clay and sandy clay occurs in the upper half of the aquifer. Thick beds of clay occur locally at the top of the aquifer (see pl. 4, section E-E', well N 4327) and seem to be distributed irregularly throughout the area.

Most of the original Cretaceous deposits in the Long Island Sound area were extensively eroded or removed before early(?) Pleistocene time. The northern limit of these deposits and of the Magothy aquifer is an erosional scarp, or ridge, into which later Pleistocene streams cut deep, north-trending valleys. These valleys were modified further by still later glacial action and are now buried beneath deposits of Pleistocene age (pls. 2-4 and fig. 7). The erosion in many of these valleys was sufficient to cut through the

Magothy aquifer into the underlying Raritan clay. The upper surface of the Magothy in the area not cut by valleys ranges in altitude from slightly below sea level to more than 200 ft above sea level (fig. 7).

The inferred extent, altitude, and configuration of the top of the Magothy aquifer in the Town of North Hempstead are shown in figure 7. The continuity, composition, and relationships of the aquifer to adjacent hydrogeologic units are shown in plates 2 to 4 and tables 2 and 3. The aquifer ranges in thickness from 0 to more than 500 ft (fig. 8); its maximum known thickness in the Town of North Hempstead is 530 ft at well N 2602 in the southeast corner of the Town (pl. 1).

It is quite possible that the uppermost part of the Magothy contains deposits of Pleistocene age or, conversely, that the lower part of the upper glacial aquifer contains Cretaceous deposits because the boundary between the Cretaceous and Pleistocene deposits in some areas is indistinguishable. In the area north of the glacial outwash plain (pl. 1), it is often difficult to differentiate between the upper glacial aquifer and the upper part of the Magothy aquifer from drillers' logs because Pleistocene deposits rest upon Cretaceous sediments of similar composition and show no significant lithologic differences that drillers would be likely to note. Also, many drillers' logs of wells north of Northern Boulevard are old and seem to be generalized; determination of the contact between the units from these logs is therefore of doubtful reliability. Some sample logs that were used in this study were prepared from cuttings collected from the mud ditch and are probably contaminated by recirculated materials. Thus, precise determination of the depth of the contacts from these samples is also uncertain.

The Magothy aquifer is the principal aquifer underlying Long Island and is the island's main source of water for public supplies. The sandbeds within the aquifer are moderately to highly permeable. The reported yield during test pumping of 90 large-capacity wells screened in the Magothy aquifer in the Town of North Hempstead ranged from 300 gal/min to as much as 1,543 gal/min. The average yield of the 90 wells was 1,000 gal/min, and specific capacities ranged from 7 to 77 gal/min per foot of drawdown, with an average specific capacity of 29.6 (gal/min)/ft. Wells screened in the basal part of the aquifer may yield up to 1,400 gal/min.

The large amount of clay in the upper half of the aquifer causes the water to become increasingly confined with depth. Along the north shore, the Magothy aquifer is probably in hydraulic continuity with the adjacent Port Washington aquifer. The Magothy also has a generally high degree of hydraulic continuity with the overlying upper glacial aquifer, but the degree of continuity may vary considerably from place to place.

The upper part of the Magothy aquifer is locally unsaturated in the Town of North Hempstead. The location and approximate thickness of the unsaturated zone within the aquifer in June 1976 is shown in figure 9. The maximum thickness of the unsaturated zone during this period is estimated to have been 80 ft. Where the Magothy is unsaturated, the upper surface of the saturated zone is the water table; elsewhere the Magothy is saturated and the water table is in the overlying upper glacial aquifer.

The interpretation and correlation of the Port Washington confining unit and the Port Washington aquifer sequences shown in plate 4, section E-E' on the log of well N 6089, differs from that shown by Swarzenski (1963) in his plate 6. Swarzenski (1963, p. 16) considered the sequence shown as the Port Washington confining unit on the log of well N 6089 (plate 4, section E-E') in this report to be part of a silt and clayey sand facies within the clay member of the Raritan Formation. The correlation has been revised in this report because (1) a distinct lithologic change occurs just north of and along the inferred area of the Pleistocene-Cretaceous contact between wells N 6095 and N 4223 (pl. 4, section E-E'); (2) the sandy facies runs generally east-west along and parallel to the front of the Cretaceous deposits to the south; and (3) a sandy facies of this extent and thickness has not been found elsewhere within the clay member of the Raritan Formation in the north-shore area of Long Island.

The Port Washington confining unit confines the water in the underlying Port Washington aquifer. Swarzenski (1963, p. 23) considered the deposits that form the unit to be variable enough in thickness and lithology to permit local interchange of water with that of the adjacent aquifers. The sand and gravel deposits within the unit are tapped by some wells.

UPPER GLACIAL AQUIFER

The upper glacial aquifer consists of deposits of late Pleistocene and Holocene age that overlie the Gardiners Clay (de Laguna, 1948, p. 16). The upper glacial aquifer overlies the Magothy aquifer and the Port Washington confining unit and locally abuts against or overlies the Port Washington aquifer. The upper surface of the aquifer and these deposits form the prese land surface, except where they are overlain by deposits of Holocene age or by landfill. The extent and relationships of these deposits to the adjacent hydrogeologic units are shown on plates 2 to 4.

The upper Pleistocene deposits are locally covered by a thin layer of Holocene deposits along the shore of Long Island Sound and its bays and along some streams, lakes, and upland marshes. The Holocene deposits are too thin to be differentiated in the sections.

The upper Pleistocene deposits consist of beds of fine to coarse stratified sand and gravel, boulder clay or till consisting of unstratified mixtures of clay and boulders, and some freshwater lake deposits composed of silt and clay (Perlmutter, 1949, p. 24).

The upper Pleistocene deposits in the Town of North Hempstead form twc hydrologically significant areas--a northern area of moraine and a southerr area of glacial outwash. The approximate boundary between the two areas, shown on plate 1, is taken from the surficial geology maps of Swarzenski (1963, pl. 8) and Isbister (1966, pl. 2).

The outwash area is underlain by stratified deposits of sand and grav that may locally contain thin clay beds. These deposits have a high perme ability and allow precipitation to percolate downward with relative ease t the water table and thence into the underlying aquifers.

The morainal area is underlain both at the surface and at depth by beds of till that can support perched water tables or retard the downward movement of water to the water table.

The deposits forming the upper glacial aquifer in the Town of North Hempstead range in thickness from 6 ft to more than 350 ft (fig. 14). This extreme variation is due to the uneven surface upon which the materials were deposited and because the upper surface of the deposits is the present irregular land surface. The deposits in the outwash area range in thickness from 14 ft to about 165 ft.

The upper glacial aquifer, as defined and used by the U.S. Geological Survey on Long Island, includes both the unsaturated and saturated parts of the upper Pleistocene deposits. The estimated saturated thickness of the aquifer in June 1976 is shown in figure 15. The upper surface of the saturated zone is the water table. As can be seen from figure 15, the upper Pleistocene deposits are locally unsaturated; in these areas the water table is in the underlying Magothy aquifer (pls. 2, 3 [section D-D'], 4; figs. 9 and 15).

Buried valleys that cut into the Cretaceous deposits in the sections (pl. 2 [section B-B'], pl. 3 [section D-D'], pl. 4 [section F-F']) and maps (figs. 3, 5, and 7) have been inferred from correlations of the well-log data and from the geologic history of the north-shore area of Long Island. These valleys may be important hydrologically because of their possible higher permeability, which would facilitate the movement of water between aquifers in response to differing hydrostatic heads within the aquifers. All deeper valleys shown on the figures and maps in this report have been previously mapped by Swarzenski (1963). Isbister (1966, pl. 3) and Jensen and Soren (1974, sheet 1) have reported similar buried valleys that have been cut deeply into or through the Cretaceous deposits.

The buried valley beneath Manhasset Bay, inferred from the driller's log of well N 291 (pl. 3, section C-C'), has been cut to at least 195 ft below sea level. The log shows that "quicksand" and very fine white sand were penetrated from 50 to 237 ft below land surface. This sand is considered to be part of the upper Pleistocene deposits that fill the valley. Sandbeds in similar stratigraphic position have been reported from wells [illegible] 23, N 216, and N 314 (pl. 1). The stratigraphic horizon occupied by this sand sequence, as shown in plate 3 (section C-C'), is one that was once probably occupied by clay of the Port Washington confining unit before it was removed by erosion. The valley is assumed to extend to bedrock because the underlying unconsolidated deposits would have been eroded with great [illegible]. However, no data to support this assumption are as yet available.

[illegible] Swarzenski (1963, pl. 3) postulated that other buried valleys had been [illegible] into the Cretaceous deposits. Some of these were not substantiated [illegible] the present study. The buried valley on Swarzenski's plate 3, which extends south from the south end of Manhasset Bay, was apparently based on [illegible] interpretation and correlation of the log of well N 5710. The recor[illegible] of this log in the present study with those of nearby wells (pl. 1) [illegible] that the valley may not exist.

the bottoms of the bays and lakes have not been differentiated from the upper glacial aquifer because they are too thin. These deposits may be hydrologically significant in that they locally retard the downward movement of saltwater from Long Island Sound and its bays into the underlying aquifers. In general, the deposits are not a source of freshwater because they are mostly above the water table or contain brackish or salty water.

SUMMARY

The ground-water reservoir underlying the Town of North Hempstead is composed of unconsolidated local deposits of Holocene age, glacial deposits of Pleistocene age, and coastal-plain deposits of continental and marine origin of Late Cretaceous age. The deposits consist of clay, silt, sand, and gravel. Weathered and crystalline bedrock of Lower Paleozoic and(or) Precambrian age underlies the unconsolidated deposits and forms the virtually impermeable base of the ground-water reservoir.

The Upper Cretaceous deposits in the Town of North Hempstead have been subdivided into three hydrogeologic units, which are, from oldest to youngest, the Lloyd aquifer, the Raritan clay, and the Magothy aquifer. These units are present throughout most of the Town and are recognized as distinct hydrogeologic units (figs. 3, 5, and 7). The deposits dip and thicken to the southeast; their maximum thickness in the Town of North Hempstead is about 950 ft.

The Lloyd aquifer (fig. 3) rests upon bedrock and consists of lenticular deposits of clay, silt, sandy clay, sand, and gravel. The top of the aquifer dips southeast from about 155 ft below sea level in Great Neck to more than 650 ft below sea level in the southeast corner of the Town of North Hempstead. The aquifer ranges from 0 to 205 ft in thickness. The average thickness, as determined from drillers' logs of 20 wells that have penetrated the full thickness of the aquifer, is 132 ft.

The Lloyd aquifer in the Town of North Hempstead is tapped by 15 public-supply wells, mainly in the north and westernmost parts of Town. Water in the aquifer is confined beneath the Raritan clay. In the Great Neck and Manhasset Neck areas, the aquifer is probably hydraulically continuous with adjacent hydrogeologic units of Pleistocene or Late Cretaceous and Pleistocene age.

The Raritan clay (fig. 5) is a significant confining unit that consists mainly of clay and silty clay and some sandy clay and sand in the upper part. The clay has a very low hydraulic conductivity but does not prevent movement of water between the overlying Magothy aquifer and the underlying Lloyd aquifer. The clay ranges from 0 to about 195 ft in thickness.

The Magothy aquifer (fig. 7) is the principal aquifer underlying the Town of North Hempstead. It consists mainly of lenticular beds of very fine to medium sand that are interbedded with beds of clay and sandy clay, silt, and some sand and gravel. Most of the clay is in the upper half of the unit. Beds of coarse sand with gravel are found at most, but not all, locations in the lower 100 to 150 ft of the unit. The aquifer reaches maximum thickness in the southeast corner of the Town, where its thickness is about 530 ft.

The large amount of clayey sediments in the upper half of the Magothy aquifer causes the water to become increasingly confined with depth. The hydrogeologic relationships between the Magothy aquifer and the adjacent aquifers of Pleistocene or Late Cretaceous and Pleistocene age (pl. 2, section B-B' and pls. 3 and 4) suggest that the units may be in close hydraulic continuity. Similarly, a high degree of hydraulic continuity probably exists in many areas between the Magothy and the overlying upper glacial aquifer.

The Cretaceous deposits in the north half of Great Neck and Manhasset Neck have been extensively eroded and probably have been removed from some areas. In their place is a thick sequence of deposits of Pleistocene and Holocene(?) age. These deposits and any remaining deposits of Cretaceous age have been subdivided into three hydrogeologic units, which are, from oldest to youngest, the Port Washington aquifer, the Port Washington confining unit, and the upper glacial aquifer. The Port Washington aquifer and Port Washington confining units, first identified and named in this report, are equivalent to the Jameco Gravel and Gardiners Clay, as mapped by Swarzenski (1963). The terms "Port Washington aquifer" and "Port Washington confining unit" are used in this report in preference to the names Jameco Gravel and Gardiners Clay because the latter imply correlations, which are questionable, with deposits of those names elsewhere on Long Island.

The Port Washington aquifer (fig. 10) consists mainly of sand or sand and gravel and varying amounts of interbedded clay, silt, and sandy clay. The deposits either rest upon bedrock or overlap or abut against the adjacent Cretaceous units (pl. 2, section B-B', and pls. 3 and 4). Locally they occur as valley fill in channels cut into the Cretaceous deposits. The deposits are probably thickest in the central parts of Great Neck and Manhasset Neck, where they average well over 100 ft in thickness. The Port Washington aquifer is a major source of freshwater in the Great Neck and Manhasset Neck areas. Water in the aquifer is confined by the overlying Port Washington confining unit. The hydrogeologic relationships between this aquifer and the Lloyd and upper glacial aquifers suggest that the aquifers are in hydraulic continuity.

The Port Washington confining unit (fig. 12) overlies the Port Washington aquifer and is in turn overlain by deposits that form the upper glacial aquifer. The deposits that form the confining unit locally overlap the adjacent Cretaceous units and constitute part of the upper valley fill in channels cut into the Cretaceous units (pl. 2, section B-B', pl. 3, section D-D', and pl. 4). The deposits consist of clay and silt with scattered lenses of sand or sand and gravel. Their maximum thickness is about 190 ft in Manhasset Neck and 234 ft in Great Neck.

The top of the confining unit in much of Great Neck ranges in altitude from 19 ft above sea level to about 50 ft below sea level, whereas in much of Manhasset Neck, the top of the confining unit is 40 ft to 60 ft lower and ranges from 36 ft to about 100 ft below sea level. The top of the unit on Manhasset Neck, however, is normally 50 ft to 100 ft below sea level.

The upper glacial aquifer consists of deposits of late Pleistocene and Holocene age that overlie the Magothy aquifer and the Port Washington confining unit and that locally abut against or overlie the Port Washington aquifer (pls. 2-4). The top of the upper Pleistocene deposits is the present land surface, except where they are locally overlain by thin deposits of Holocene age.

The upper Pleistocene deposits are composed of beds of fine to coarse stratified sand and gravel, boulder clay, or tills, consisting of unstratified mixtures of clay and boulders, and some freshwater lake deposits of silt and clay (Perlmutter, 1949, p. 24). The deposits in the Town of North Hempstead can be divided into two hydrologically significant areas on the basis of general lithologic composition. The southermost part of the Town is underlain by highly permeable glacial outwash consisting of stratified sand and gravel and occasional thin clay beds; the rest of the Town is underlain by glacial moraine that consists of sand and gravel, boulder clay, till, and lake deposits.

The deposits forming the upper glacial aquifer range in thickness from 6 ft to more than 350 ft. The extreme variation in thickness results from the highly eroded surface upon which these materials were deposited and the irregularity of their upper surface, which is the present land surface. The outwash deposits range in thickness from 14 ft to about 165 ft. The estimated thickness of the saturated zone in the aquifer during June 1975 ranged from 0 to about 350 ft.

The upper glacial aquifer is the source of all recharge to the underlying aquifers but is also a source of contamination because it receives large amounts of cesspool effluent and surface pollutants, which percolate down to the water table.

The aquifer was tapped in the past by many public-supply wells. However, since it has become polluted it is tapped only sparsely as a public supply. The aquifer is now tapped mainly by domestic, irrigation, commercial and industrial wells.

REFERENCE NO. 4

WERBIN

LONG ISLAND WATER RESOURCES
BULLETIN LIWR-6

ANALOG MODEL PREDICTION OF THE HYDROLOGIC EFFECTS OF SANITARY SEWERAGE IN SOUTHEAST NASSAU AND SOUTHWEST SUFFOLK COUNTIES, NEW YORK

By
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Dennis J. Sulam, Rufus T. Getzen

U. S. Department of the Interior
Geological Survey

Prepared by the
U. S. GEOLOGICAL SURVEY

in cooperation with the
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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SUFFOLK COUNTY WATER AUTHORITY

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1977

Long Island has many streams, most of which are relatively short-- 15 mi (24 km) or less (fig. 2). Approximately 90 percent of the flow in these streams is derived from ground water; the amount of flow depends on the elevation of the water table. When the water table declines, the position of the start of flow in streams can move downstream; also ground-water gradients to the streams are generally reduced. Thus, the effect of a decline in the water table is a decrease in streamflow and stream length. Prior to urban development, about 60 percent of the water infiltrating the aquifer was discharged to streams (Franke and McClymonds, 1972, table 11). The dependency of streamflow on altitude of the water table is a significant factor in any model of Long Island's hydrologic system.

Table 1.--Generalized description of hydrogeologic units underlying study area 1/

Hydrogeologic unit	Lithology and water-bearing character
Upper glacial aquifer	Mainly sand and gravel of moderate to high permeability; also includes clayey deposits of till of low permeability.
Gardiners Clay	Clay, silty clay, and a little fine sand of low to very low permeability.
Jameco aquifer	Mainly medium to coarse sand of moderate to high permeability.
Magothy aquifer	Coarse to fine sand of moderate permeability; locally contains gravel of high permeability and abundant silt and clay of low to very low permeability.
Raritan clay	Clay of very low permeability; some silt and fine sand of low permeability.
Lloyd aquifer	Sand and gravel of moderate permeability; some clayey material of low permeability.

1/ Adapted from Cohen, Franke, and Foxworthy (1968).

REFERENCE NO. 5

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual
(HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

TABLE 2

PERMEABILITY OF GEOLOGIC MATERIALS*

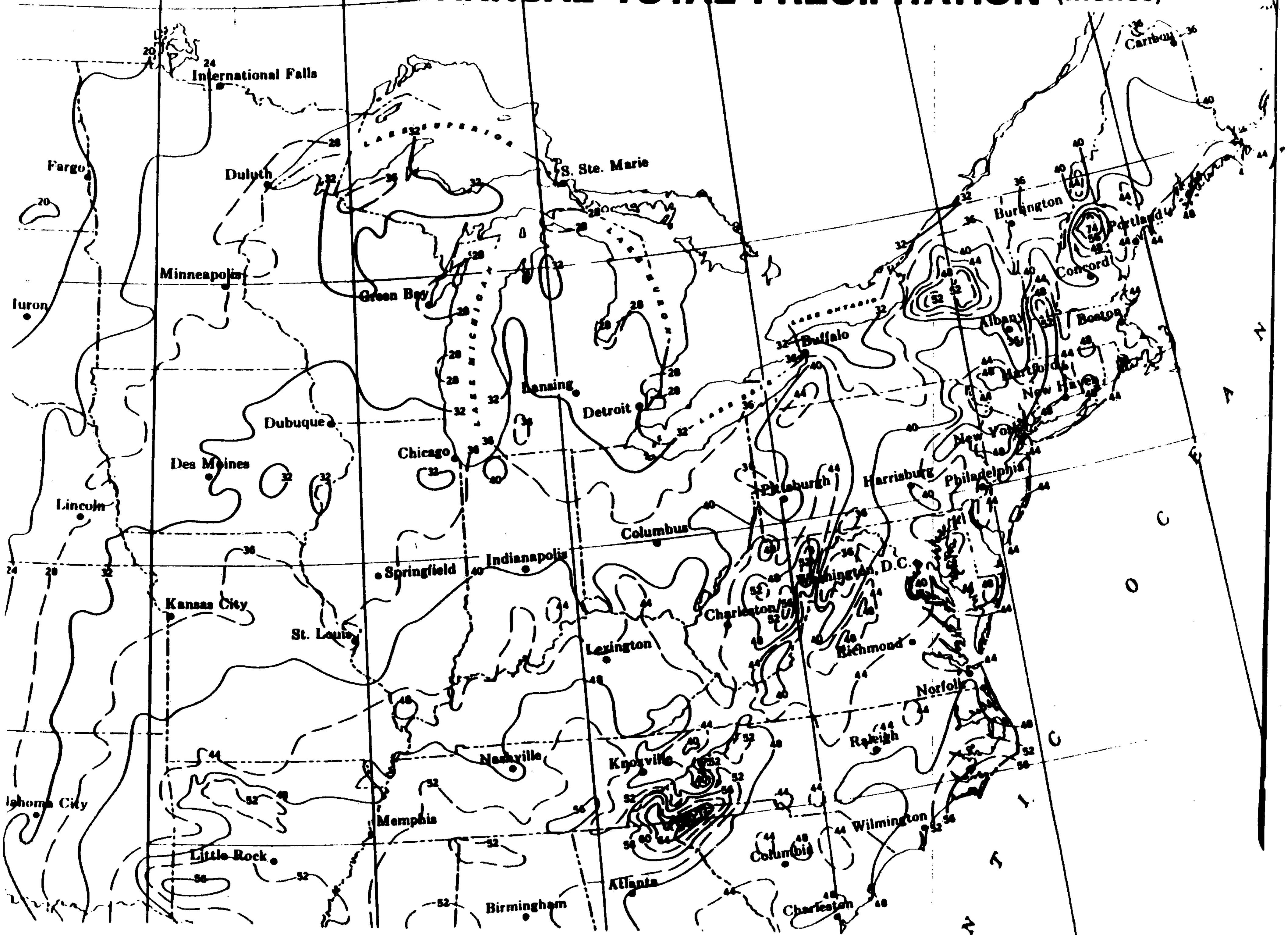
Type of Material	Approximate Range of Hydraulic Conductivity	Assigned Value
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	10^{-5} - 10^{-7} cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	10^{-3} - 10^{-5} cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$>10^{-3}$ cm/sec	3

*Derived from:

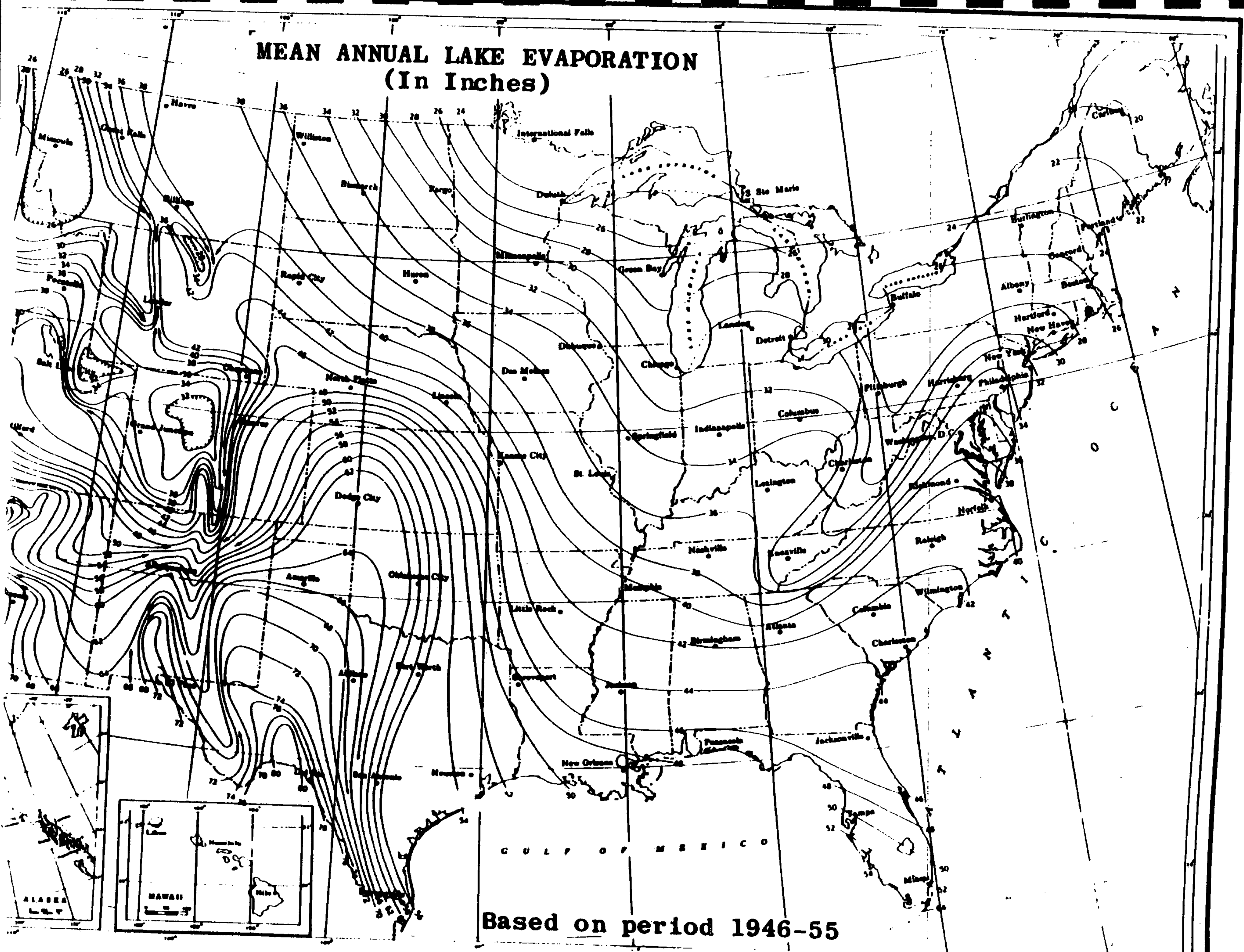
Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

NORMAL ANNUAL TOTAL PRECIPITATION (Inches)

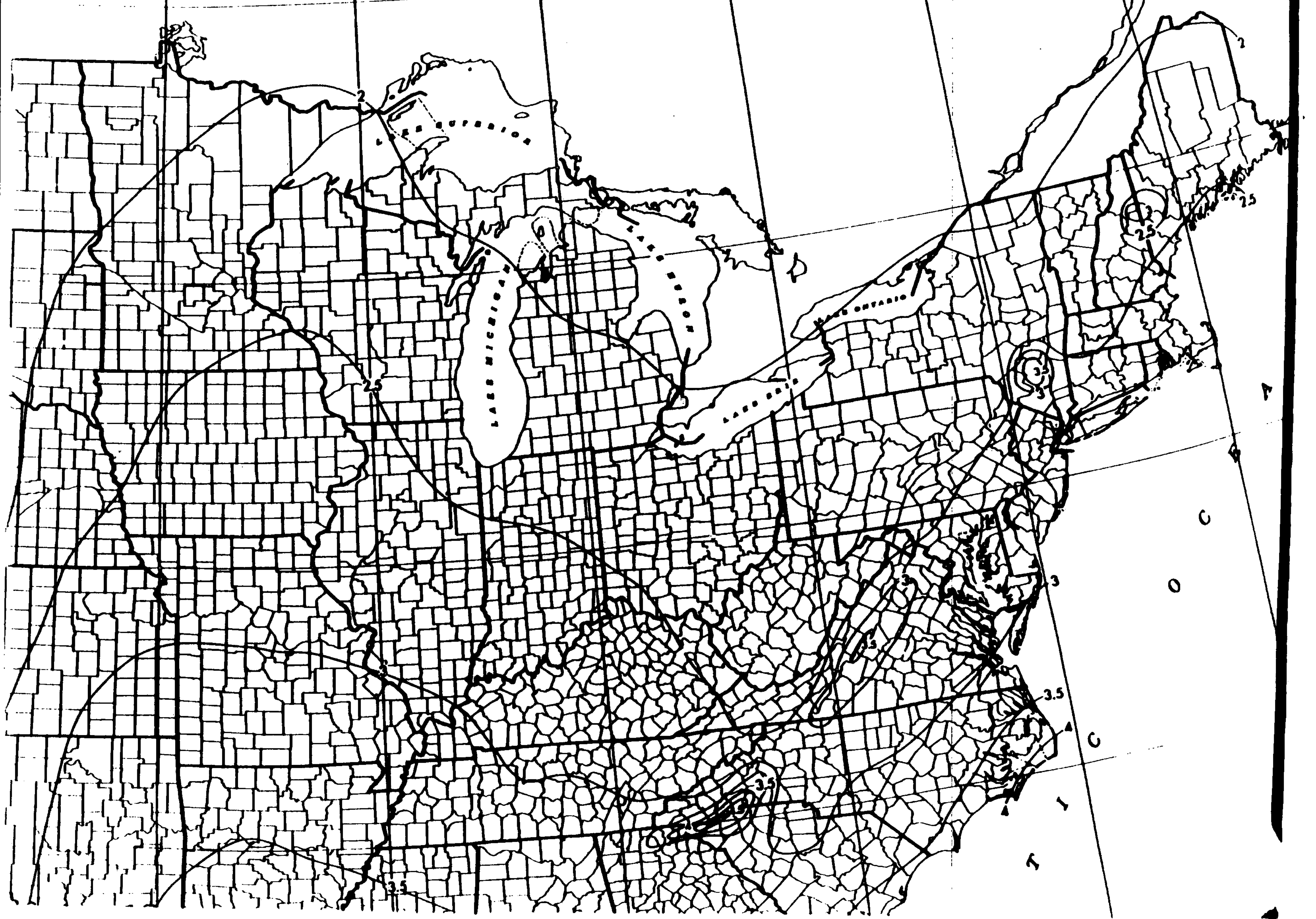


MEAN ANNUAL LAKE EVAPORATION
(In Inches)



Based on period 1946-55

1 YEAR 24-HOUR RAINFALL (inches)



REFERENCE NO. 6

02-8709-02

NUS CORPORATION TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8708-02	8/5/87	1000

DISTRIBUTION:

Autotronic Products

BETWEEN:	OF:	PHONE:
Rocky Piaggione	NYDEC Environmental Enforcement ALBANY	1(914) 761-6660

AND:

W. Schnitzerling (NUS)

DISCUSSION:

The possible sampling at Autotronic Products - the past problems at this site.

Between 1981 and 1982 approximately 50 gallons of TCE & process water were dumped in the back of this site by the employees. They were instructed to do it by management. The waste was from a sonic bath, when it was too diluted or dirty to use it was taken and dumped out the back door. It held about 5 gallons. This bath was emptied 10 times before this practice was stopped.

The area, in which the dumping occurred is a small (10'x10') asphalt, common yard (~~Autotr~~ Autotronics rents a section of a small building. There are other tenants - businesses - in this building, They all share a common back yard). The yard slopes to the back fence. The property is bordered by ~~the LI~~ Long Island Rail Road tracks. The waste TCE is believed to run off the asphalt under the fence onto the LIRR's property. (~~Here it is b~~) Since there are no

ACTION ITEMS:

storm drains in this area it is believed the TCE leached into the soil + into the groundwater.

~~Auto~~ Autotronics was fined $1,000.00 by the NYDEC. There wasn't any sampling done on this site, and as far as Mr Piaggione knows there are no other problems at this site. Autotronics now recycles their waste TCE, or it is hauled off site (by approved haulers), depending on the quality of the particular batch.

NUS 067 REVISED 0581

REFERENCE NO. 7

02-8708-02

NUS CORPORATION TELECON NOTE

CONTROL NO:	DATE:	TIME:
02-8708-~~02~~	08/05/87	1430

DISTRIBUTION:

Autotronic Products.

BETWEEN:	OF:	PHONE:
Joe Schechter	Nassau County Division of Health	1 (516)-535-2406

AND: W Schnitzerling (NUS)

DISCUSSION:

Autotronic Products is a small company that manufactures small electronic devices. They were fined by the NYDEC Enforcement Division for illegally dumping TCE in the back of their property. Autotronics shares a common backyard with the other small companies sharing this building. The area where the waste was dumped is asphalt, so the TCE ran off this property onto the ~~a~~ bordering property, owned by the Long Island Rail Road.

Since they were fined Autotronics has not had any problems (involving wastes). They now Recycle TCE and what they can't reuse they ~~can~~ have hauled offsite by EPA licensed haulers. Approximately 1 drum a year is hauled offsite. This site was recently inspected by the Nassau County Division of Health ~~and~~ (march 1987) and no problems or violations were recorded.

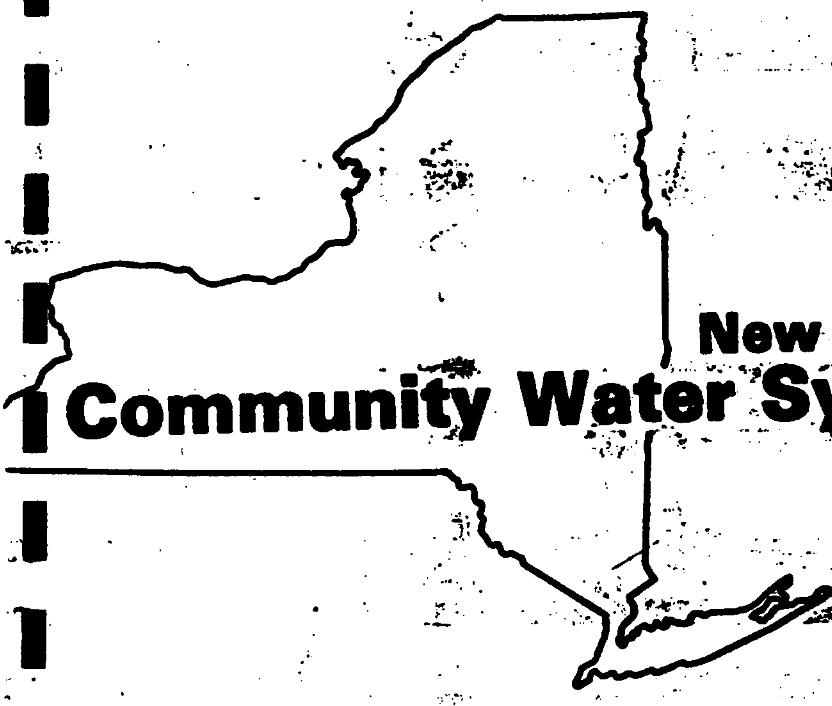
Although wastes were dumped at this site (approx 50 gallons over a year period between 1981 & 1982), sampling ~~or~~ any type of remediation were Never undertaken. Since the entire property is paved, the wastes were believed to have ~~run off~~ migrated to the LIRR's property, because of the

ACTION ITEMS:

slope of the property. Mr. Schetcher said the ~~(only notice noticeable)~~) weeds behind Autotronics (and on LIRR property) were bushy except for one denuded spot, but he could not confirm this flora damage was from the dumped TCE.

NUS 087 REVISED 0581

REFERENCE NO. 8



New York State Atlas of Community Water System Sources 1982

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

NASSAU COUNTY

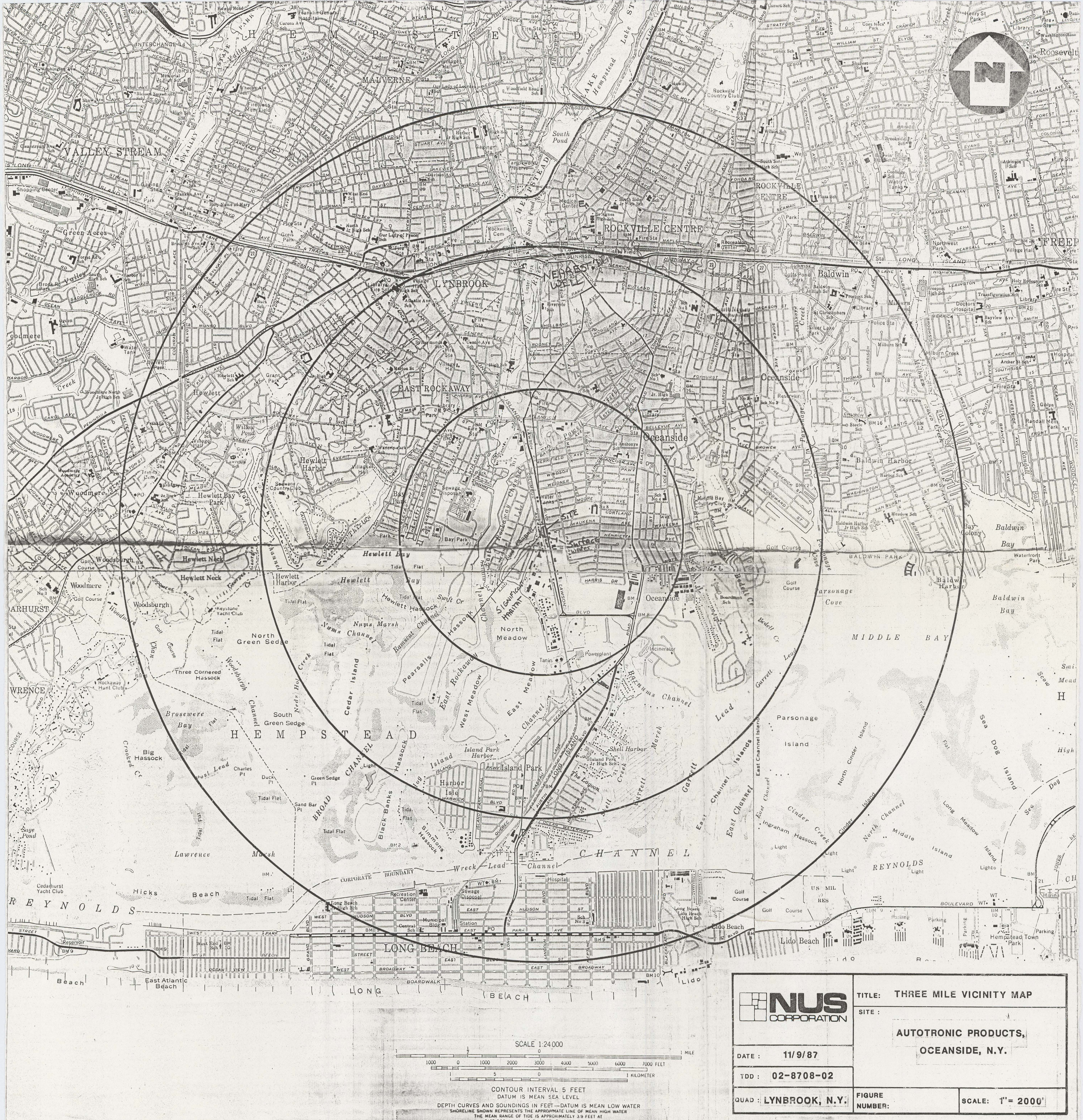
ID NO	COMMUNITY WATER SYSTEM	POPULATION	SOURCE
	Municipal Community		
1	Albertson Water District	13500	Wells
2	Bayville Village	7500	Wells
3	Bethpage Water District	32000	Wells
4	Bowling Green Water District	12000	Wells
5	Carle Place Water District	11000	Wells
6	Citizens Water Supply Company	30000	Wells
7	Deforest Drive Association	25	Wells
8	East Meadow Water District	52000	Wells
9	Farmingdale Village	7946	Wells
10	Franklin Square Water District	20000	Wells
11	Freeport Village	38272	Wells
12	Garden City Park Water District	22596	Wells
13	Garden City Village	22927	Wells
14	Glen Cove City	24618	Wells
15	Hempstead Village	40404	Wells
16	Hicksville Water District	58000	Wells
17	Jamaica Water Supply Company	128448	Wells
18	Jericho Water District	64000	Wells
19	Levittown Water District	50000	Wells
20	Lido-Point Lookout Water District	10000	Wells
21	Locust Valley Water District	8500	Wells
22	Long Beach City	34073	Wells
23	Long Island Water Corporation	258936	Wells
24	Manhasset-Lakeville Water District	44730	Wells
25	Massapequa Water District	52000	Wells
26	Mill Neck Estates Water Supply	240	Wells
27	Mineola Village	20600	Wells
28	New York Water Service	172180	Wells
29	Old Westbury Village	3100	Wells
30	Oyster Bay Water District	10225	Wells
31	Plainview Water District	40000	Wells
32	Plandome Village	2616	Wells
33	Port Washington Water District	35000	Wells
34	Rockville Centre Village	25405	Wells
35	Roosevelt Field Water District	1640	Wells
36	Roslyn Water District	27500	Wells
37	Sands Point Village	3002	Wells
38	Sea Cliff Water Company	17850	Wells
39	Sel-Bra Acres Water Supply	80	Wells
40	South Farmingdale Water District	49900	Wells
41	Split Rock Water Supply	25	Wells
42	Uniondale Water District	25000	Wells
43	West Hempstead-Hempstead Garden Water District	32000	Wells
44	Westbury Water District	20050	Wells
45	Williston Park Village	8216	Wells
	Non-Municipal Community		
46	Community Hospital at Glen Cove	1350	Wells
47	Planting Fields Arboretum	90	Wells
48	Stuart, Walker, Zimmer Water Supply	41	Wells

SCALE 1:250,000

5 0 5 MILES


CONNECTICUT
WESTCHESTER
NASSAU
SUFFOLK
Eatons Neck Point
Lloyd Point
Asharoken
Centre Island
Mamaroneck
MAMARONECK
Larchmont
New Rochelle
Pelham Manor
Prospect Point
Sands Point
Glen Cove
Sea Cliff
Oyster Bay
Laurel Hollow
Syosset
Woodbury
Muttontown
Old Brookville
Brookville
Glen Head
Roslyn Harbor
Port Washington
Manorhaven
Kings Point
NORTH HEMPSTEAD
OYSTER BAY
Jericho
Old Westbury
Hicksville
Plainview
Melville
Westbury
New Cassel
Carle Place
Bethpage
Garden City
Floral Park
East Meadow
Levittown
Farmingdale
Franklin Square
Elmont
Uniondale
Hempstead
Massapequa Park
Wantagh
Bellmore
Roosevelt
Rockville Centre
Valley Stream
Merrick
Seaford
Massapequa
Lindenhurst
BABYLON
Freeport
Oceanside
East Rockaway
Hewlett Harbor
Woodmere
Cedarhurst
Inwood
Lawrence
Island Park
Atlantic Beach
Long Beach
Lido Beach
Point Lookout
JONES BEACH STATE PARK
GILGO STATE PARK
QUEENS
BRONX
NEW YORK CITY
Rockaway Point
SITE
A T

REFERENCE NO. 9



NUS CORPORATION

TITLE:	THREE MILE VICINITY MAP
SITE:	AUTOTRONIC PRODUCTS, OCEANSIDE, N.Y.
DATE:	11/9/87
TDD:	02-8708-02
QUAD:	LYNBROOK, N.Y.
FIGURE NUMBER:	
SCALE:	1" = 2000'

REFERENCE NO. 10

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT

Draft

PROJECT NARRATIVE

WEST HEMPSTEAD BAY

LOCATION AND DESCRIPTION OF HABITAT:

West Hempstead Bay is located along the south shore of Long Island, between the Villages of Lawrence and Island Park, in the Town of Hempstead, Nassau County (7.5' Quadrangles: Lawrence, N.Y.; and Lynbrook, N.Y.). This approximate 4000 acre area is generally defined by the mean high water elevation on the west, north, and east sides, and by the center line of the Reynolds Channel to the south. The fish and wildlife habitat is the entire bay, which includes extensive areas of undeveloped salt marsh, tidal flats, dredge spoil islands, and open water. Water depths in the bay vary from less than 6 feet (below mean low water) in the natural creeks and bays, to over 30 feet in portions of some dredged navigation channels. Tidal fluctuations in the bay average approximately 3.6 - 4.2 feet. West Hempstead Bay is owned by the Town of Hempstead and is managed as a wetland conservation area, with allowance for mosquito control activities (ditching). The bay is surrounded by residential development and small craft harbor facilities.

FISH AND WILDLIFE VALUES:

West Hempstead Bay comprises approximately one-third of the vast Hempstead Bays wetland complex. The bay represents one of the largest undeveloped coastal wetland ecosystems in New York State. This highly diverse area is important to fish and wildlife throughout the year. Common terns (T) nest in many locations throughout the bay, including Hewlett Hassock, Lawrence Marsh, North Green Sedge Island, and Nims Marsh. Approximately 75 pairs of common terns nested in the area during 1984. West Hempstead Bay is also inhabited by a variety of nesting heron species, including snowy egret, great egret, black-crowned night heron, and green-backed heron. This area is also one of the few locations on Long Island where yellow-crowned night heron, tri-colored heron, and little blue heron have been found nesting. Heronries have been located on Pearsall's Hassock, North and South Black Banks Hassock, Lawrence Marsh, North Green Sedge Island, and Boorman's Island. Nests are usually placed in woody vegetation which has become established on abandoned dredge spoil deposits. As of 1977, Pearsall's Hassock contained some of the largest nesting concentrations of snowy egrets, great egrets, and glossy ibis in New York State, with estimates of 227, 30, and 260 pairs, respectively. Other species nesting in West Hempstead Bay include Canada goose, black duck, mallard, herring gull, great black-backed gull, clapper rail, willet, Forster's tern, fish crow, marsh wren, boat-tailed grackle, sharp-tailed sparrow, and seaside sparrow. The salt marshes, intertidal flats, and shallows in this area are used extensively as feeding areas for birds nesting here and for many other species during migration (shorebirds in particular).

West Hempstead Bay is one of the most important waterfowl wintering areas (November - March) on Long Island. Mid-winter aerial surveys of waterfowl abundance for the ten year period 1975-1984 indicate average concentrations of over 3,200 birds in the bay each year (8,325 in peak year), including approximately 2,700 brant (8,325 in peak year), and 345 black ducks (1,150 in peak year), along with lesser numbers of scaup, mallard, Canada goose,

...dsquaw, bufflehead, and red-breasted merganser. West Hempstead Bay supports one of the largest wintering concentrations of brant in New York State. Waterfowl use of the bay during winter is influenced in part by the extent of ice cover each year. Generally, brant and geese feed in open water areas through midwinter, while later in spring (prior to migration), the birds feed extensively in the salt marshes. Concentrations of waterfowl also occur in the area during spring and fall migrations (March-April and October - November, respectively). All of West Hempstead Bay is open to the public for waterfowl hunting, and the area supports regionally significant hunting pressure.

In addition to having significant bird concentrations, West Hempstead Bay is a productive area for marine finfish, shellfish, and other wildlife. The bay serves as a nursery and feeding area (April - November, generally) for bluefish, winter flounder, summer flounder, kingfish, weakfish, blackfish, snapper, scup, blue claw crabs, and forage species, such as Atlantic silverside, menhaden, pipefish, and sticklebacks. As a result of the abundant fisheries resources in the bay, and its proximity to the New York metropolitan area, West Hempstead Bay receives heavy recreational fishing pressure, of regional significance. The bay is inhabited by hard clams and ribbed mussels, but most of the bay waters are not certified for shellfishing. There is considerable potential for harvesting young clams from the area for transplanting into commercial aquaculture areas. Diamondback terrapin (SC) nest among the salt marsh islands in the bay. Muskrat populations in the area support a significant amount of trapping by local residents.

IMPACT ASSESSMENT:

Any activity that would substantially degrade the water quality in West Hempstead Bay could adversely affect the biological productivity of this area. All species of fish and wildlife may be affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal. Efforts should be made to improve water quality in the bay, including control of sewage discharges from recreational boats and upland sources. Alteration of tidal patterns in West Hempstead Bay could have major impacts on the fish and wildlife communities present. No new navigation channels should be excavated within the area. Dredging to maintain existing boat channels in the bay should be scheduled in late summer and fall to minimize impacts on aquatic organisms, and to allow for spoil disposal when wildlife populations are least sensitive to disturbance. Elimination of salt marsh and shallow areas, through excavation or filling, would result in a direct loss of valuable habitat area. Unregulated dredge spoil disposal in this area could be detrimental, but such activities may be designed to maintain or improve the habitat for certain species of wildlife. Nesting birds inhabiting the islands of West Hempstead Bay are highly vulnerable to disturbance by humans from mid-April through July. Recreational use (e.g., boat landing, picnicking) of those islands which contain concentrations of nesting birds should be minimized during this period, through the use of annual posting or fencing. Construction and maintenance of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development (i.e., natural salt marsh tidal flats, or shallows), may have a significant impact on the fish and wildlife resources of West Hempstead Bay.

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or Louise Harrison, Environmental Protection Biologist
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Stony Brook, NY 11790
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Pieter VanVolkenburgh, Chief
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Point Lookout, NY 11569
Phone: (516)431-9200

NYSDEC - Significant Habitat Unit
Wildlife Resources Center
Delmar, NY 12054
Phone: (518)439-7486

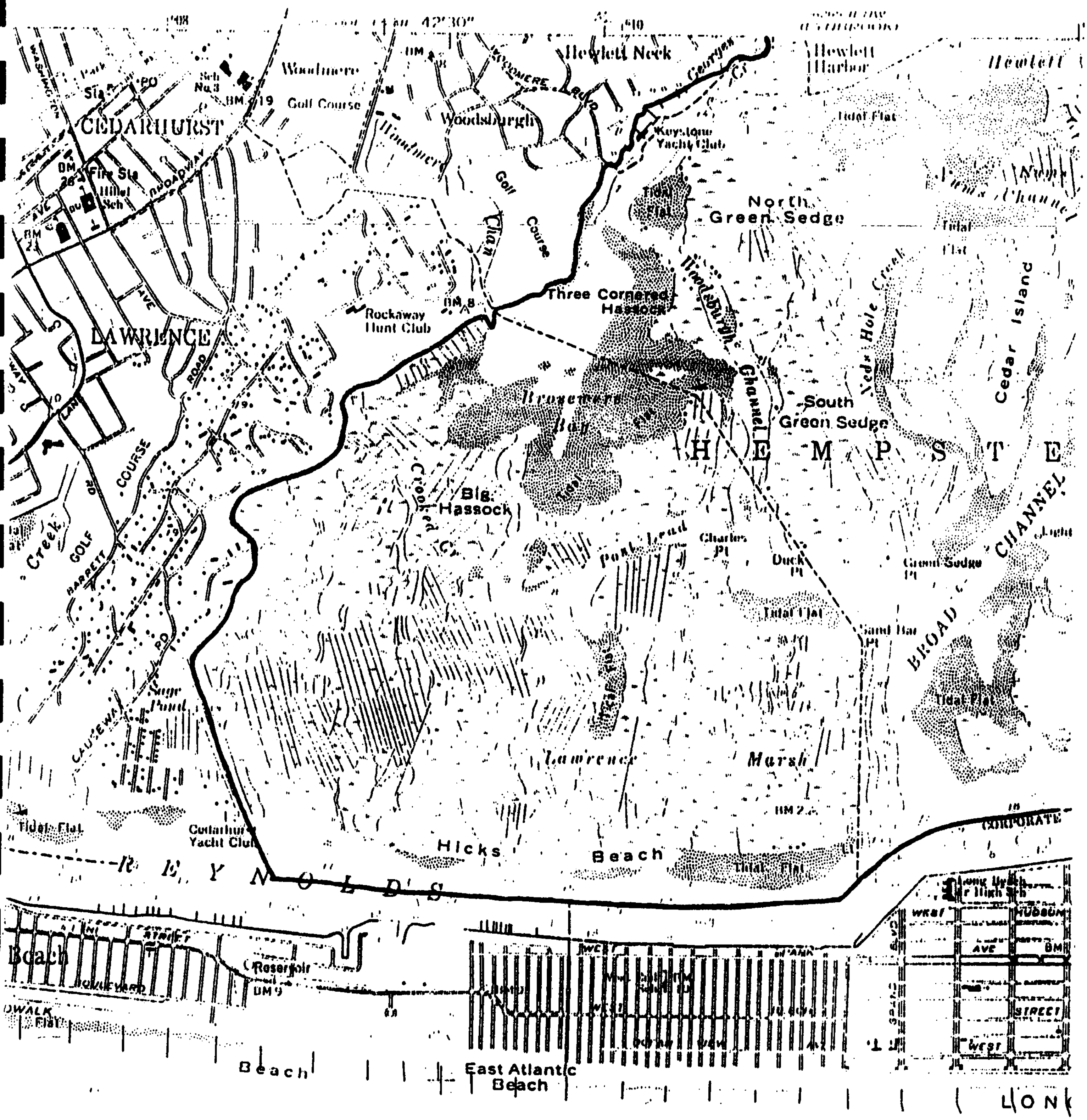
COUNTIES: Nassau

NAME OF AREA: West Hempstead Bay

QUADRANGLE: Lawrence

PAGE 1 OF 3

NEW YORK STATE SIGNIFICANT HABITATS

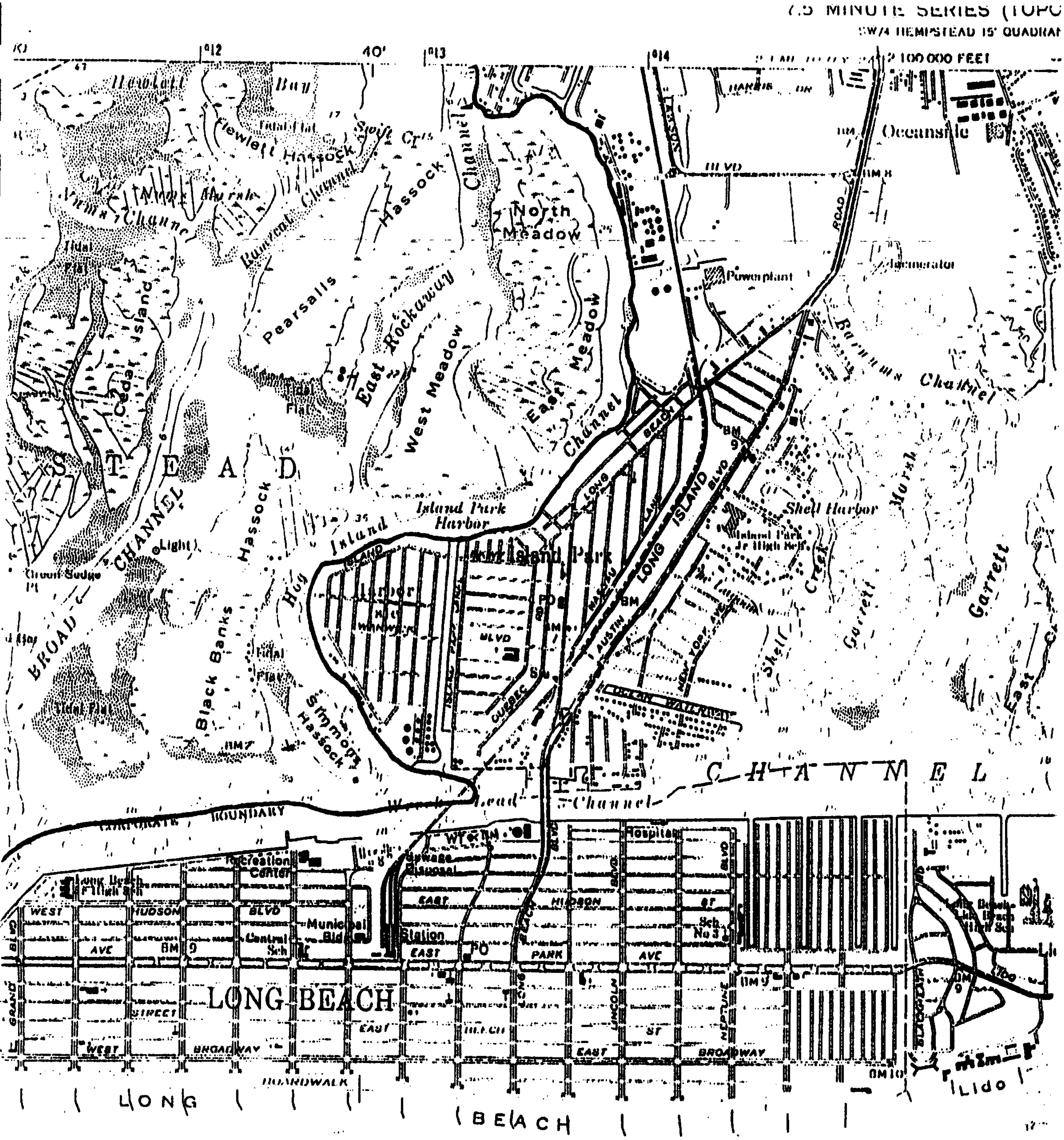


COUNTIES: Nassau

NAME OF AREA: West Hempstead Bay

QUADRANGLE: Lawrence

NEW YORK STATE SIGNIFICANT HABITATS

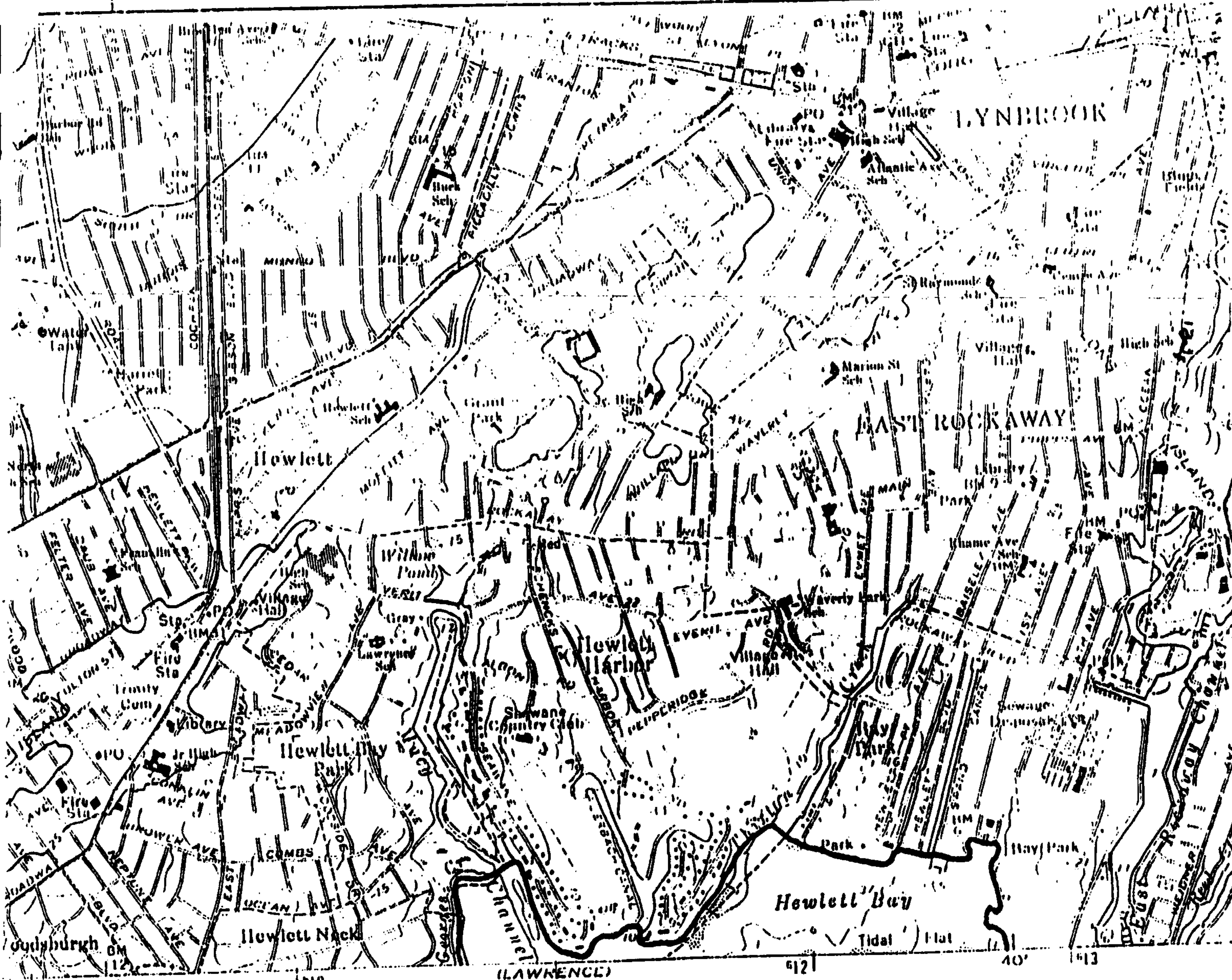


COUNTIES: Nassau

NAME OF AREA: West Hempstead Bay

QUADRANGLE: Lynbrook

NEW YORK STATE SIGNIFICANT HABITATS



SCALE 1:24 000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 5 FEET

DATUM IS MEAN SEA LEVEL

DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER

SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER

THE MEAN RANGE OF TIDE IS APPROXIMATELY 3.9 FEET AT EAST ROCKAWAY AND 5.4 FEET AT NORTON POINT

NEW YORK

QUADRANGLE LO

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242

A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Draft

SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT

PROJECT NARRATIVE

MIDDLE HEMPSTEAD BAY

LOCATION AND DESCRIPTION OF HABITAT:

Middle Hempstead Bay ("Middle Bay") is located along the south shore of Long Island, between the Village of Island Park and the Meadowbrook State Parkway, in the Town of Hempstead, Nassau County (7.5' Quadrangles: Freeport, N.Y.; Jones Inlet, N.Y.; Lawrence, N.Y.; and Lynbrook, N.Y.). This approximate 5,000 acre area is generally defined by the mean high water elevation on all sides, except south of the Loop Parkway, where it extends to the center line of the Reynolds and Sloop Channels. The fish and wildlife habitat is the entire bay, which includes extensive areas of undeveloped salt marsh, tidal flats, dredge spoil islands, and open water. Water depths in the bay vary from less than 6 feet (below mean low water) in the natural creeks and bays, to over 30 feet in portions of some dredged navigation channels. Tidal fluctuations in the bay average approximately 3.6 - 4.2 feet. Most of Middle Hempstead Bay is owned by the Town of Hempstead and is managed as a wetland conservation area, with allowance for mosquito control activities (ditching). The bay is surrounded by residential development and small craft harbor facilities, except on the east side, which is bordered by undeveloped right-of-way for the Meadowbrook Parkway.

FISH AND WILDLIFE VALUES:

Middle Hempstead Bay comprises approximately one-third of the vast Hempstead Bays wetland complex. The bay represents one of the largest undeveloped coastal wetland ecosystems in New York State. This highly diverse area is important to fish and wildlife throughout the year. Common terns (T) nest in many locations throughout the bay, including Garrett Marsh, East Channel Islands, North Cinder Island, Gull Island, and Cinder Island. In 1984, a total of approximately 575 pairs of common terns nested in Middle Bay. Middle Bay is also inhabited by a variety of nesting heron species, including snowy egret, great egret, black-crowned night heron, and green-backed heron. This area is also one of the few locations on Long Island where yellow-crowned night heron and tri-colored heron have been found nesting. Heronries have been located on South Pine Marsh, High Meadow Island, and on Smith Meadow, south of Little Swift Creek. Nests are usually placed in woody vegetation which has become established on abandoned dredge spoil deposits. As of 1977, Smith Meadow contained regionally significant nesting concentrations of snowy egret, black-crowned night heron, and glossy ibis, with estimates of 165, 95, and 53 pairs, respectively. Other species nesting in Middle Hempstead Bay include Canada goose, black duck, mallard, herring gull, American oystercatcher, clapper rail, willet, gull-billed tern, fish crow, marsh wren, sharp-tailed sparrow, and seaside sparrow. The salt marshes, intertidal flats, and shallows in this area are used extensively as feeding areas for birds nesting here and for many other species during migration (shorebirds in particular).

Middle Hempstead Bay is one of the most important waterfowl wintering areas (November - March) on Long Island. Mid-winter aerial surveys of waterfowl abundance for the ten year period 1975-1984 indicate average concentrations of over 6,600 birds in the bay each year (26,855 in peak year), including approximately 4,200 brant (10,880 in peak year), 2,000 scaup (17,750 in peak year), and 230 black ducks (975 in peak year), along with lesser numbers of bufflehead, common goldeneye, canvasback, mallard, Canada goose, oldsquaw, and red-breasted merganser. Middle Bay supports the largest wintering concentration of brant in New York State. Waterfowl use of the bay during winter is influenced in part by the extent of ice cover each year. Generally, brant and geese feed in open water areas through midwinter, while later in spring (prior to migration), the birds feed extensively in the salt marshes. Concentrations of waterfowl also occur in the area during spring and fall migrations (March - April and October - November, respectively). All of Middle Bay is open to the public for waterfowl hunting, and the area supports regionally significant hunting pressure.

In addition to having significant bird concentrations, Middle Hempstead Bay is a productive area for marine finfish, shellfish, and other wildlife. The bay serves as a nursery and feeding area (from April - November, generally) for bluefish, winter flounder, summer flounder, kingfish, weakfish, blackfish, scup, blue claw crab, and forage fish species, such as Atlantic silverside, pipefish, and sticklebacks. As a result of the abundant fisheries resources in the bay, and its proximity to the New York metropolitan area, Middle Bay receives heavy recreational fishing pressure, of regional significance. The bay is inhabited by hard clams and ribbed mussels, but most of the bay waters are not certified for shellfishing. There is considerable potential for harvesting young clams from the area for transplanting into commercial aquaculture areas. Diamondback terrapin (SC) nest among the salt marsh islands in the bay, and at the Oceanside Marine Nature Study Area. Muskrat populations in the area support a significant amount of trapping by local residents. Several facilities for environmental education are located around Middle Bay, providing nature study opportunities for many Nassau County residents.

IMPACT ASSESSMENT:

Any activity that would substantially degrade the water quality in Middle Hempstead Bay could adversely affect the biological productivity of this area. All species of fish and wildlife may be affected by water pollution, such as chemical contamination (including food chain effects), oil spills, excessive turbidity, and waste disposal. Efforts should be made to improve water quality in the bay, including control of sewage discharges from recreational boats and upland sources. Alteration of tidal patterns in Middle Bay could have major impacts on the fish and wildlife communities present. No new navigation channels should be excavated within the area. Dredging to maintain existing boat channels in the bay should be scheduled in late summer and fall to minimize potential impacts on aquatic organisms, and to allow for spoil disposal when wildlife populations are least sensitive to disturbance. Elimination of salt marsh and shallow areas, through excavation or filling, would result in a direct loss of valuable habitat area. Unregulated dredge spoil disposal in this area could be detrimental, but such activities may be designed to maintain or improve the habitat for certain species of wildlife. Nesting birds inhabiting the islands of Middle Bay are highly vulnerable to disturbance by humans from mid-April through July. Recreational use (e.g., boat landing, picnicking) of those islands which contain concentrations of nesting birds should be minimized during this period, through the use of annual posting or fencing. Construction and maintenance of shoreline structures, such as docks, piers, bulkheads, or revetments, in areas not previously disturbed by development (i.e., natural salt marsh, tidal flats, or shallows), may have a significant impact on the fish and wildlife resources of Middle Hempstead Bay.

KNOWLEDGEABLE CONTACTS:

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Point Lookout, NY 11569
Phone: (516)431-9200

NYSDEC-Significant Habitat Unit
Wildlife Resources Center
Delmar, NY 12054
Phone: (518)439-7486

NAME OF AREA:

QUADRANGLE: PAGE 1 OF

NEW YORK STATE SIGNIFICANT HABITATS

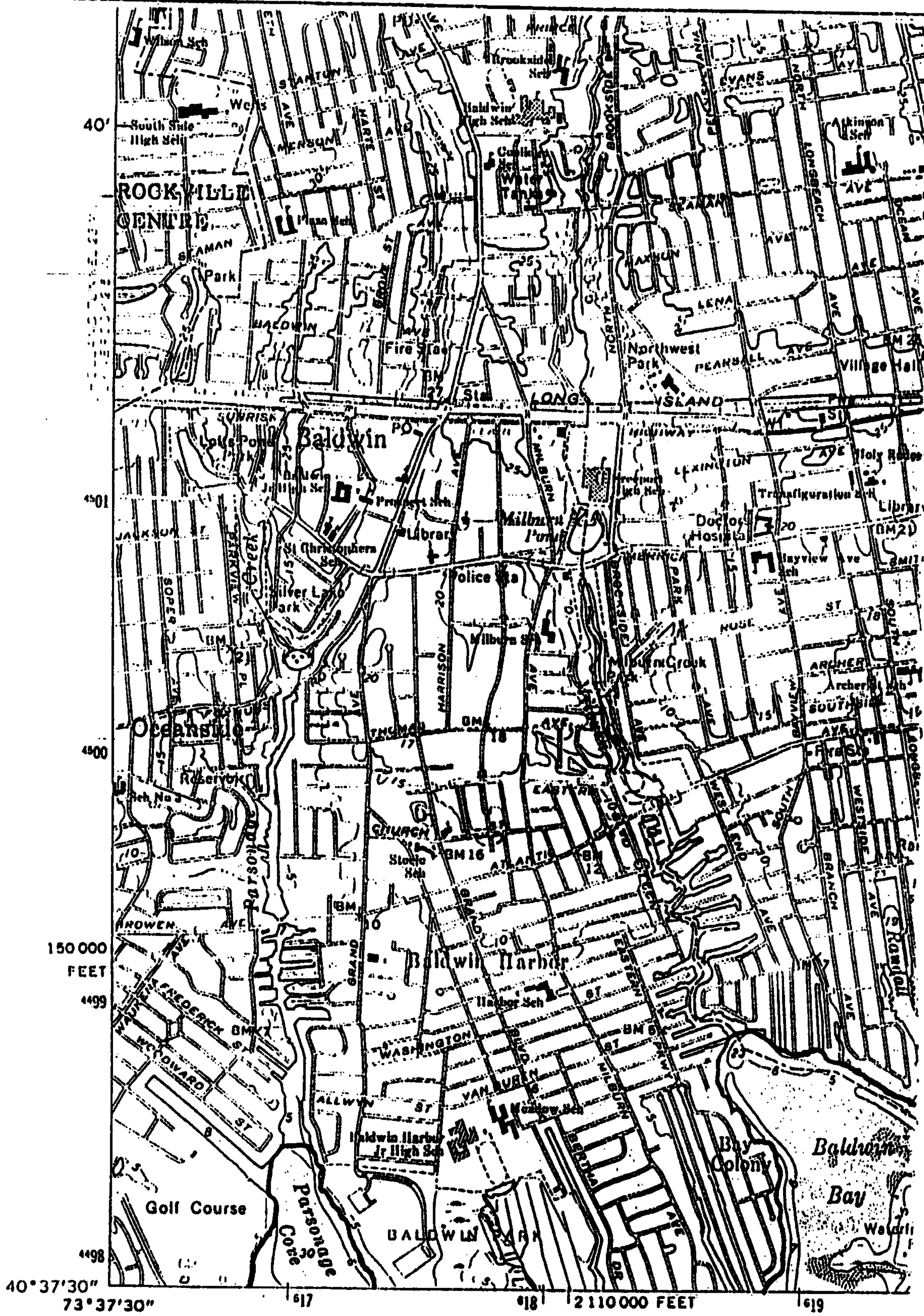
COUNTIES: Nassau

NAME OF AREA: Middle Hempstead Bay

QUADRANGLE: Freeport

PAGE 2 OF 5

NEW YORK STATE SIGNIFICANT HABITATS



Mapped, edited, and published by the Geological Survey

Control by USGS, USC&GS, USCE, and Nassau County

Topography by photogrammetric methods from aerial photographs taken 1966. Field checked 1969

Supersedes Army Map Service map dated 1955

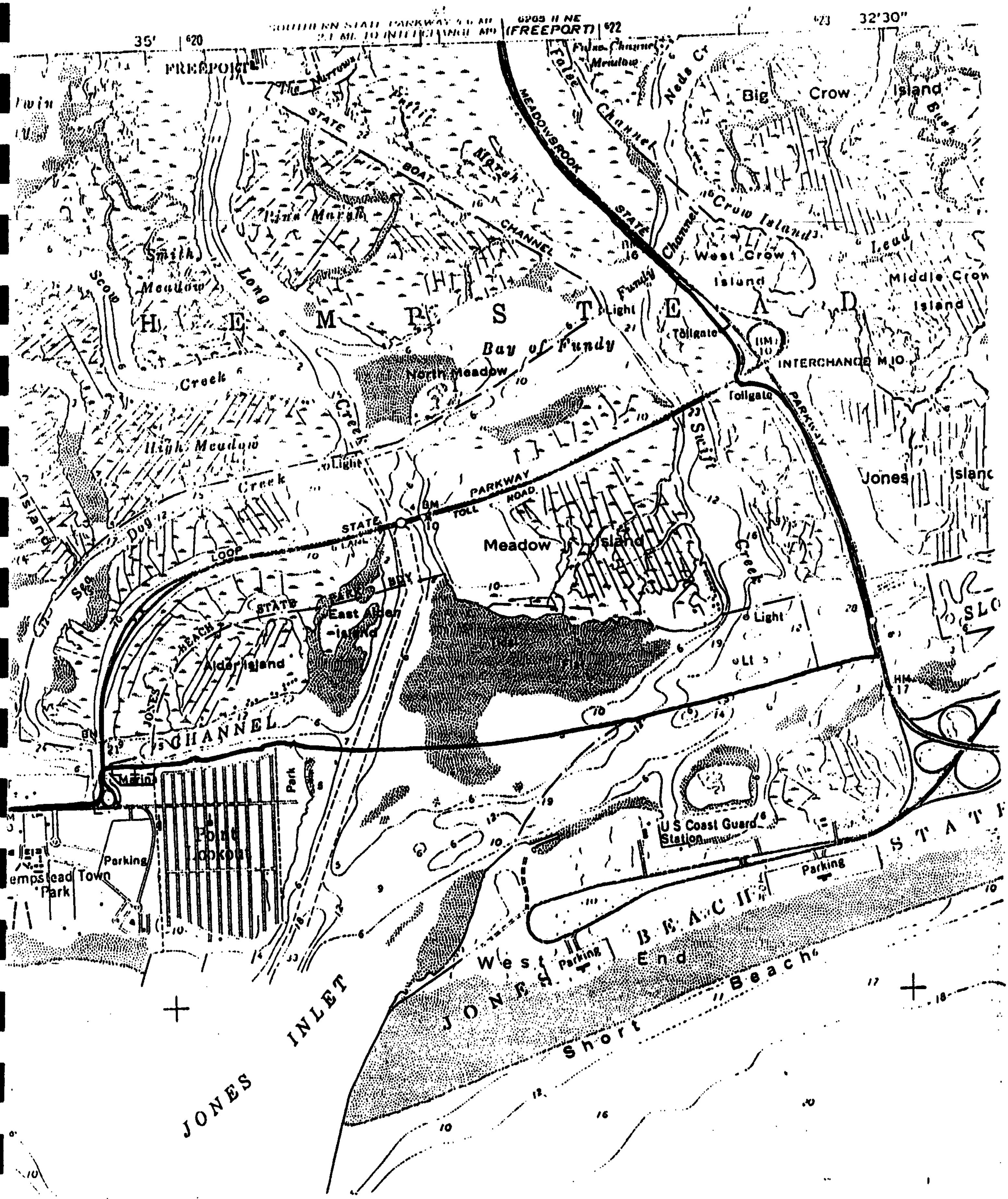
Selected hydrographic data compiled from USC&GS Chart

NAME OF AREA: Middle Hempstead Bay

QUADRANGLE: Jones Inlet

PAGE 3 OF 5

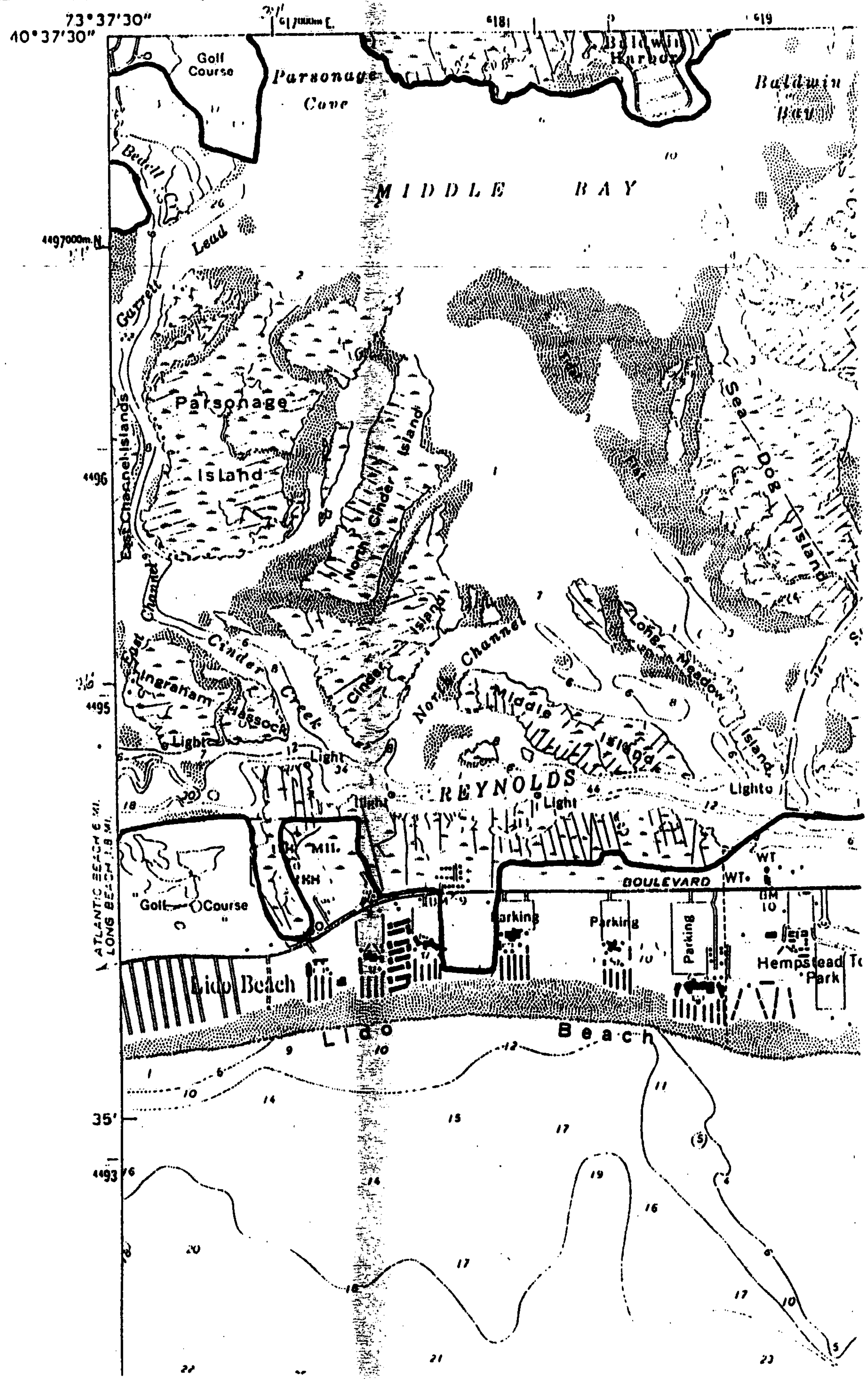
NEW YORK STATE SIGNIFICANT HABITATS



NAME OF AREA: Middle Hempstead Bay

QUADRANGLE: Lawrence [illegible] PAGE 4 OF 5

NEW YORK STATE SIGNIFICANT HABITATS



SIGNIFICANT COASTAL FISH AND WILDLIFE HABITAT

Draft

PROJECT NARRATIVE

NASSAU BEACH

LOCATION AND DESCRIPTION OF HABITAT:

Nassau Beach is located approximately one mile west of Point Lookout, on the westernmost barrier island on Long Island's south shore. The beach is located within Nassau Beach County Park, in the Town of Hempstead, Nassau County (7.5' Quadrangle: Jones Inlet, N.Y.). The fish and wildlife habitat consists of approximately 15 acres of sparsely vegetated dunes and the adjoining shell and pebble beach. The area is subdivided by sections of snow fence which extend from the upper beach into the dunes, perpendicular to the shoreline. Although the beach receives heavy recreational use during the summer, the habitat area is generally located behind the open beach, and receives relatively little human disturbance. The area was not posted or fenced as a bird nesting area in 1984.

FISH AND WILDLIFE VALUES:

The Nassau Beach fish and wildlife habitat consists of a small segment of undeveloped barrier beach ecosystem. Development and use of the adjacent recreation facilities has resulted in relatively little degradation of the habitat. Areas such as this are rare in Nassau County. Nassau Beach serves as an important nesting site for least terns (E) and piping plovers (T). From 1982-1984, approximately 100-160 pairs of least terns and 1-3 pairs of piping plovers have nested in the area. The least tern populations at this site in 1983 and 1984 were the largest in Nassau County, and were among the ten largest on Long Island in those years. There are no significant human use activities associated with the wildlife resources at Nassau Beach.

IMPACT ASSESSMENT:

Nesting shorebird species inhabiting the barrier beaches of Long Island are highly vulnerable to disturbance by humans from mid-April through July. Significant pedestrian traffic or recreational use of the uppermost beach area and dunes could destroy the Nassau Beach tern and plover nesting habitat, and should be minimized during this period. Fencing and/or annaul posting of the bird nesting area should be provided to help protect the nesting bird species. Unregulated dredge spoil disposal in this area could be detrimental, but such activities may be designed to maintain or improve the habitat, by setting back vegetative succession. Introduction or attraction of mammalian predators to the Nassau Beach area would also be detrimental to the populations of nesting birds.

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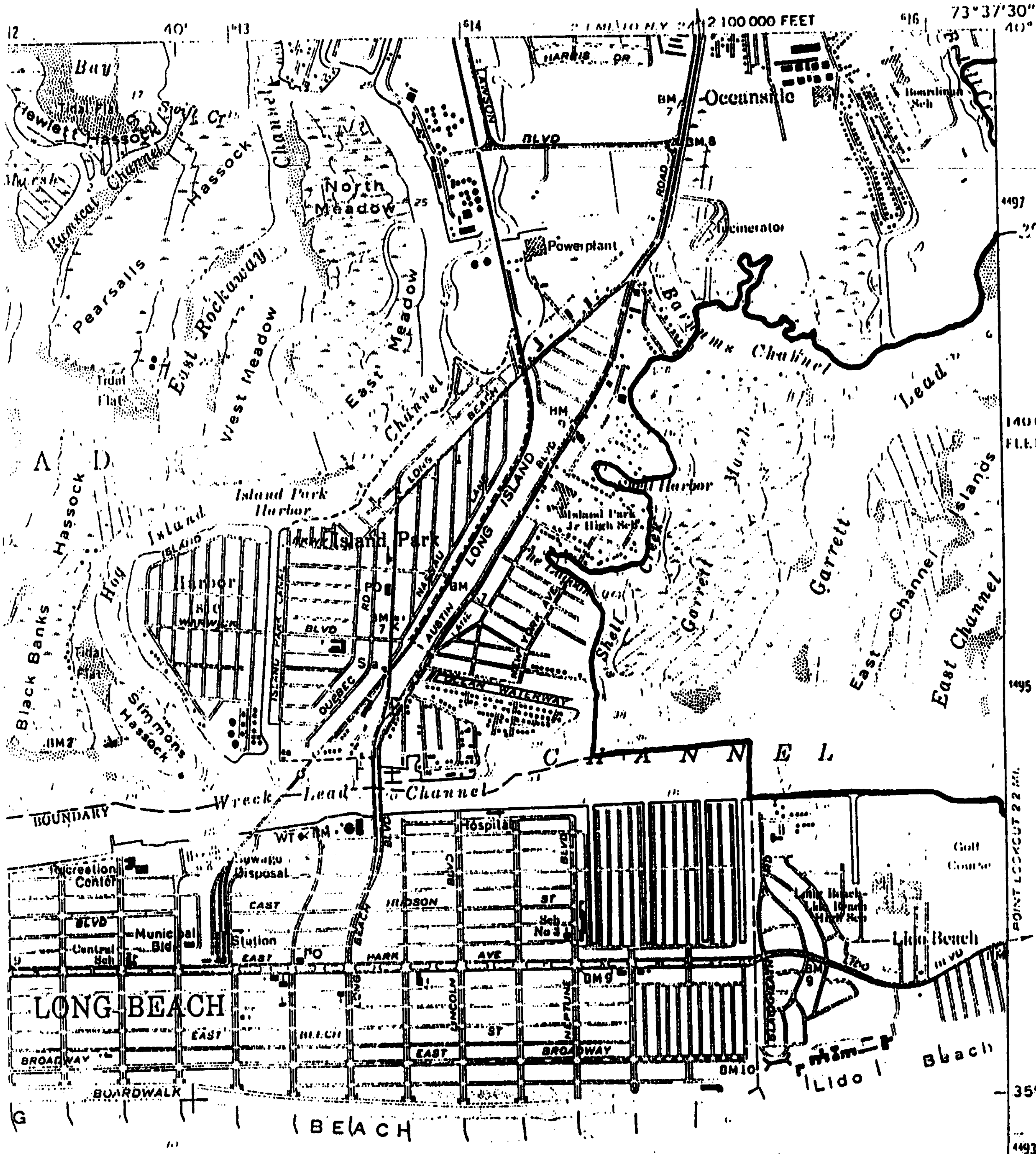
David Peterson, Staff Biologist
Seatuck Research Program
Cornell University Laboratory of Ornithology
P.O. Box 31
Islip, N.Y. 11751
Phone: (516)581-6908

NYSDEC-Significant Habitat Unit
Wildlife Resources Center
Delmar, NY 12054
Phone: (518)439-7486

NAME OF AREA: Middle Hempstead Bay

QUADRANGLE: Lawrence

NEW YORK STATE SIGNIFICANT HABITATS



---- material on this area -

REFERENCE NO. 11

AUTOTRONIC PRODUCTS

Lat: 40°37'46"N Long: 73°39'13"W

Data List of Dataset: NYW3 Number of Records = 6

REC #		POP	HOUSE	DISTANCE	SECTOR
1		650	197	0.400000	1
2		4728	1464	0.810000	1
3	1-1	7779	2579	1.60000	1
4	1-2	50696	17151	3.20000	1
5	1-3	85551	28703	4.80000	1
6	1-4	111423	39336	6.40000	1

miles	1/4	1/2	1	2	3	4
Population	650	5378	13157	63,853	149,404	260,827
Housing	197	1661	4240	21,391	50,094	89,430

REFERENCE NO. 12

CHEMICAL, PHYSICAL, AND BIOLOGICAL PROPERTIES OF COMPOUNDS PRESENT AT HAZARDOUS WASTE SITES

Final Report

Prepared for:

U.S. Environmental Protection Agency

Prepared by:

Clement Associates, Inc.
1515 Wilson Boulevard
Arlington, Virginia 22209

Under Subcontract to:

GCA Corporation
Bedford, Massachusetts 01730

September 27, 1985

Summary

Preliminary results suggest that 1,1,1-trichloroethane (1,1,1-TCA) induces liver tumors in female mice. It was shown to be mutagenic using the Ames assay, and it causes transformation in cultured rat embryo cells. Inhalation exposure to high concentrations of 1,1,1-TCA depressed the central nervous system; affected cardiovascular function; and damaged the lungs, liver, and kidneys in animals and humans. Irritation of the skin and mucous membranes has also been associated with human exposure to 1,1,1-trichloroethane.

CAS Number: 71-55-6

Chemical Formula: CH_3CCl_3

IUPAC Name: 1,1,1-Trichloroethane

Important Synonyms and Trade Names: Methyl chloroform, chlorothene, 1,1,1-TCA

Chemical and Physical Properties

Molecular Weight: 133.4

Boiling Point: 74.1°C

Melting Point: -30.4°C

Specific Gravity: 1.34 at 20°C (liquid)

Solubility in Water: 480-4,400 mg/liter at 20°C (several divergent values were reported in the literature)

Solubility in Organics: Soluble in acetone, benzene, carbon tetrachloride, methanol, ether, alcohol, and chlorinated solvents

Log Octanol/Water Partition Coefficient: 2.17

Vapor Pressure: 123 mm Hg at 20°C

Vapor Density: 4.63

Transport and Fate

1,1,1-Trichloroethane (1,1,1-TCA) disperses from surface water primarily by volatilization. Several studies have indicated that 1,1,1-trichloroethane may be adsorbed onto organic materials in the sediment, but this is probably not an important route of elimination from surface water. 1,1,1-Trichloroethane can be transported in the groundwater, but the speed of transport depends on the composition of the soil.

Photooxidation by reaction with hydroxyl radicals in the atmosphere is probably the principal fate process for this chemical.

Health Effects

1,1,1-Trichloroethane was retested for carcinogenicity because in a previous study by NCI (1977), early lethality precluded assessment of carcinogenicity. Preliminary results indicate that 1,1,1-TCA increased the incidence of combined hepatocellular carcinomas and adenomas in female mice when administered by gavage (NTP 1984). There is evidence that 1,1,1-trichloroethane is mutagenic in *Salmonella typhimurium* and causes transformation in cultured rat embryo cells (USEPA 1980). These data suggest that the chemical may be carcinogenic.

Other toxic effects of 1,1,1-TCA are seen only at concentrations well above those likely in an open environment. The most notable toxic effects of 1,1,1-trichloroethane in humans and animals are central nervous system depression, including anesthesia at very high concentrations and impairment of coordination, equilibrium, and judgment at lower concentrations (350 ppm and above); cardiovascular effects, including premature ventricular contractions, decreased blood pressure, and sensitization to epinephrine-induced arrhythmia; and adverse effects on the lungs, liver, and kidneys. Irritation of the skin and mucous membranes resulting from exposure to 1,1,1-trichloroethane has also been reported. The oral LD_{50} value of 1,1,1-trichloroethane in rats is about 11,000 mg/kg.

Toxicity to Wildlife and Domestic Animals

The acute toxicity of 1,1,1-trichloroethane to aquatic species is rather low, with the LC_{50} concentration for the most sensitive species tested being 52.8 mg/l. No chronic toxicity studies have been done on 1,1,1-trichloroethane, but acute-chronic ratios for the other chlorinated ethanes ranged from 2.8 to 8.7. 1,1,1-Tricholoroethane was only slighty bioaccumulated with a steady-state bioconcentration factor of nine and an elimination half-life of two days.

No information on the toxicity of 1,1,1-trichloroethane to terrestrial wildlife or domestic animals was available in the literature reviewed.

Regulations and Standards

Ambient Water Quality Criteria (USEPA):

Aquatic Life

The available data are not adequate for establishing criteria. However, EPA did report, the lowest values of the two trichloroethanes (1,1,1 and 1,1,2) known to be toxic in aquatic organisms.

Freshwater

Acute toxicity: 18 mg/liter
Chronic toxicity: 8.4 mg/liter

Saltwater

Acute toxicity: 31.2 mg/liter
Chronic toxicity: No available data

Human Health

Criterion: 18.4 mg/liter

NIOSH Recommended Standard: 350 ppm (1,910 mg/m^3)/15 min Ceiling Level

OSHA Standard: 350 ppm (1,910 mg/m^3) TWA

REFERENCES

INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC). 1979. IARC Monographs on the Evaluation of the Carcinogenic Risks of Chemicals to Humans. Vol. 20: Some Halogenated Hydrocarbons. World Health Organization, Lyon, France. Pp. 515-531

NATIONAL CANCER INSTITUTE (NCI). 1977. Bioassay of 1,1,1-Trichloroethane for Possible Carcinogenicity. CAS No. 71-55-6. NCI Carcinogenesis Technical Report Series No. 3. Washington, D.C. DHEW Publication No. (NIH) 77-803

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH). 1976. Criteria for a Recommended Standard--Occupational Exposure to 1,1,1-Trichloroethane (Methyl Chloroform). Washington, D.C. DHEW Publication No. (NIOSH) 76-184

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH). 1983. Registry of Toxic Effects of Chemical Substances. Data Base. Washington, D.C. October 1983

NATIONAL TOXICOLOGY PROGRAM (NTP). 1984. Annual Plan for Fiscal Year 1984. Research Triangle Park, N.C. DHHS Public Health Service. NTP-84-023

U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA). 1979. Water-Related Environmental Fate of 129 Priority Pc [illegible]tants. Washington, D.C. December 1979. EPA 440/4- [illegible] 29

U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA). 1 [illegible] Ambient Water Quality Criteria for Chlorinated Eth[illegible] Office of Water Regulations and Standards, Criter[illegible] and Standards Division, Washington, D.C. October 1980. EPA 440/5-80-029

U.S. ENVIRONMENTAL PROTECTION AGENCY (USEPA). 1984. Health Effects Assessment for 1,1,1-Trichloroethane. Environmental Criteria and Assessment Office, Cincinnati, Ohio. September 1984. ECAO-CIN-H005 (Final Draft)

VERSCHUEREN, K. 1977. Handbook of Environmental Data on Organic Chemicals. Van Nostrand Reinhold Co., New York. 659 pages

WEAST, R.E., ed. 1981. Handbook of Chemistry and Physics. 62nd ed. CRC Press, Cleveland, Ohio. 2,332 pages

REFERENCE NO. 13

KEY TO MAP

500-Year Flood Boundary	
100-Year Flood Boundary	ZONE B
Zone Designations*	
100-Year Flood Boundary	ZONE B
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 ×
Zone D Boundary	
River Mile	•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance and flood plain management purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas. The coastal flooding elevations shown may differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

For adjoining map panels, see separately printed Index To Map Panels.

Coastal base flood elevations shown on this map include the effects of wave action.

Coastal base flood elevations apply only landward of 0.0 NGVD.

INITIAL IDENTIFICATION:
APRIL 25, 1975

FLOOD HAZARD BOUNDARY MAP REVISIONS:
NONE

FLOOD INSURANCE RATE MAP EFFECTIVE:
APRIL 16, 1979

FLOOD INSURANCE RATE MAP REVISIONS:
March 4, 1985 - to include the effects of wave action

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620.

N

APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF HEMPSTEAD, NEW YORK NASSAU COUNTY

PANEL 51 OF 75
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
360467 0051 B

MAP REVISED:
MARCH 4, 1985

Federal Emergency Management Agency

ZONE B
AVENUE
HOKE
AVENUE
ZONE B
ZONE C
AVENUE
5TH AVENUE
ZONE C
ZONE B
KRESSE STREET
ZONE C
ANTHONY STREET
ZONE C
STORM STREET
FALLER STREET
ZONE B
WANNAMAKER STREET
PIERCE
ZADIE STREET
MANOR STREET
BENDER STREET
DIEAVINE STREET
MOORE
ZONE B
AVENUE
ZONE C
PARK WAY
THOMPSON
LEXINGTON
EAST
ZONE C
AVENUE
CONCORD
VIRGINIA
MURRAY
OCEAN
LEA LANE
ELAINE
HARRIS
ZONE B
HAMPTON ROAD

REFERENCE NO. 14

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

PRIME FARMLAND OF NEW YORK

INTERPRETATIONS DERIVED FROM GENERAL SOIL MAP COMPILED BY CORNELL UNIVERSITY AGRICULTURAL EXPERIMENT STATION
CONSTRUCTED 1977 BY CARTOGRAPHIC DIVISION, SOIL CONSERVATION SERVICE, U.S. DEPARTMENT OF AGRICULTURE

AUGUST 1979

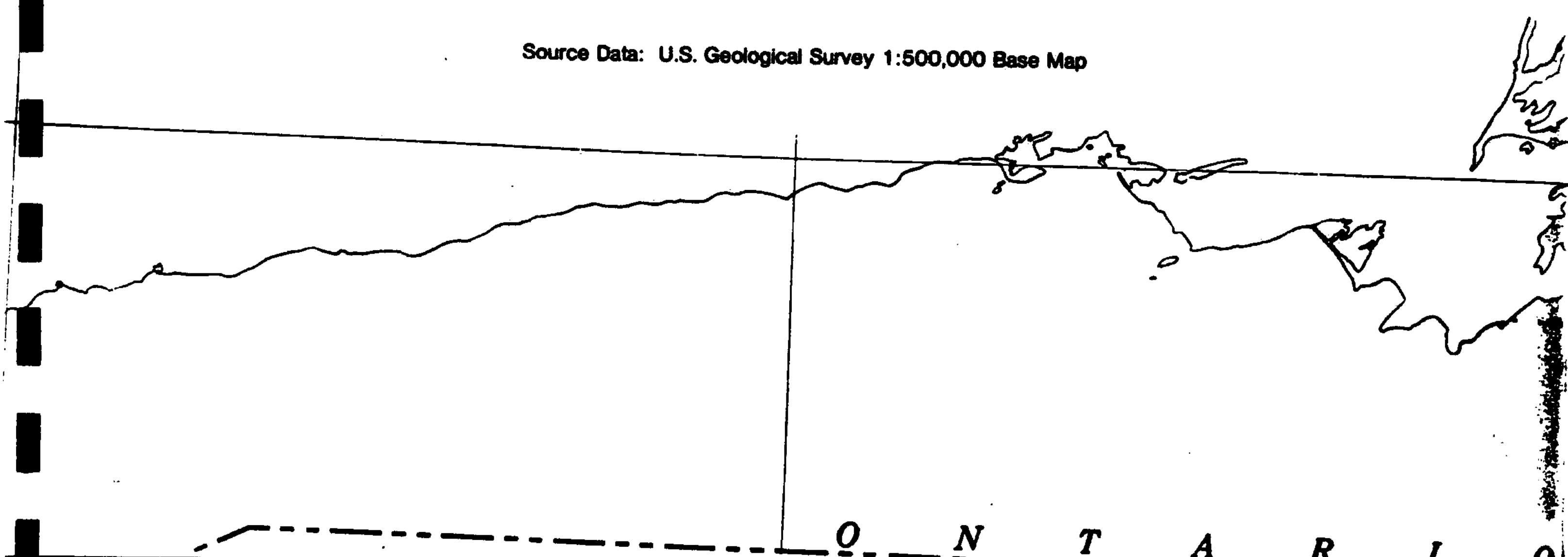
Scale 1: 750,000

1 Inch Equals Approximately 12 Miles

10 0 10 20 30 40 Miles

10 0 10 20 30 40 50 Kilometers

Source Data: U.S. Geological Survey 1:500,000 Base Map



LEGEND

Map Symbol	Name

1. Glacial Till

A - Hapludalfs dominant

- A1 Cazenovia and Mohawk areas
- A2 Hilton areas
- [redacted] Honeoye areas
- A4 Lansing areas
- [redacted] Madrid areas
- A6 Ontario areas

Aw - Ochraqualfs dominant

- Aw1 Appleton areas
- Aw2 Burdett and Darien areas
- Aw3 Ovid areas

B - Fragiudalfs dominant

- B Langford areas

Bw - Fragiaqualfs dominant

- Bw Erie areas

C - Eutrochrepts dominant

- C Nellis areas
- Cr Farmington areas
- CLw1 Hogansburg-Swanton areas
- CLw2 Pittsfield-Rhinebeck areas

D - Dystrochrepts dominant

- D Charlton areas
- Dh Muskingum areas
- DhE Lordstown-Mardin areas
- Dr1 Hollis areas
- Dr2 Lordstown and Oquaga areas
- Dr3 Nassau areas
- Ds Charlton, Paxton, and Essex areas.

Dw - Haplaquepts dominant

- Dw Fremont and Hornell areas

E - Fragiochrepts dominant

- E1 Bath areas
- E2 Ira areas
- E3 Lackawanna areas
- E4 Mardin areas
- E5 Sodus areas
- EDr Bernardston-Nassau areas
- EG Bernardston-Hoosic areas
- Es Lackawanna and Wurtsboro areas, very stony

Ew - Fragiaquepts dominant

- Ew1 Mosherville areas
- Ew2 Volusia areas

F - Haplorthods, Fragiorthods, or very stony Fragiaquods dominant

- F Empeyville areas
- Fs1 Becket, Berkshire, and Potsdam areas, very stony
- Fs2 Westbury and Coveytown areas, very stony
- Fs3 Worth areas, very stony

Fw - Fragiaquods and frigid Fragiaquepts dominant

- Fw1 Camroden areas
- Fw2 Westbury and Brayton areas

2. Glacial Outwash and Deltaic Sand

G - Dystrochrepts dominant

- [redacted] Chenango and Blasdell areas
- [redacted] Haven and Riverhead areas
- GD Chenango-Valois and Howard-Madrid areas

Gd - Udipsamments, sandy skeletal Dystrochrepts or skeletal Eutrochrepts dominant

- Gd1 Alton and Hoosic areas
- Gd2 Colonie, Plymouth and Windsor areas
- GdE Plymouth-Montauk areas

Gw - Psammaquents or Haplaquepts dominant

- Gw Minoa and Stafford areas

H - Hapludalfs dominant

- H1 Arkport areas
- [redacted] Howard areas
- [redacted] Palmyra areas

Kd - Haplorthods dominant

- Kd Colton and Adams areas

Kw - Haplaquods dominant

- Kw Naumburg areas

3. Lake and Marine Sediments

L - Hapludalfs or silty Fragiochrepts dominant

- [redacted] Collamer areas
- L2 Schoharie areas
- LE Williamson-Ira areas
- Lh Hudson areas

Lw - Ochraqualfs or Haplaquepts dominant

- Lw1 Canandaigua areas
- Lw2 Kingsbury areas
- [redacted] Niagara areas
- Lw4 Odessa and Rhinebeck areas
- Lw5 Swanton-Rhinebeck areas
- LwC Kingsbury-Hogansburg areas
- LwR Kingsbury-Rock outcrop areas

4. Organic Deposits

M - Histosols dominant

- [redacted] Carlisle and Palms areas

5. Miscellaneous Units

R - Rock outcrop dominant

- R Rock outcrop areas, sloping
- Rh Rock outcrop areas, steep

U - Unclassified soil

- U1 Beach-Tidal marsh areas
- U2 Urban Land areas

LEGEND

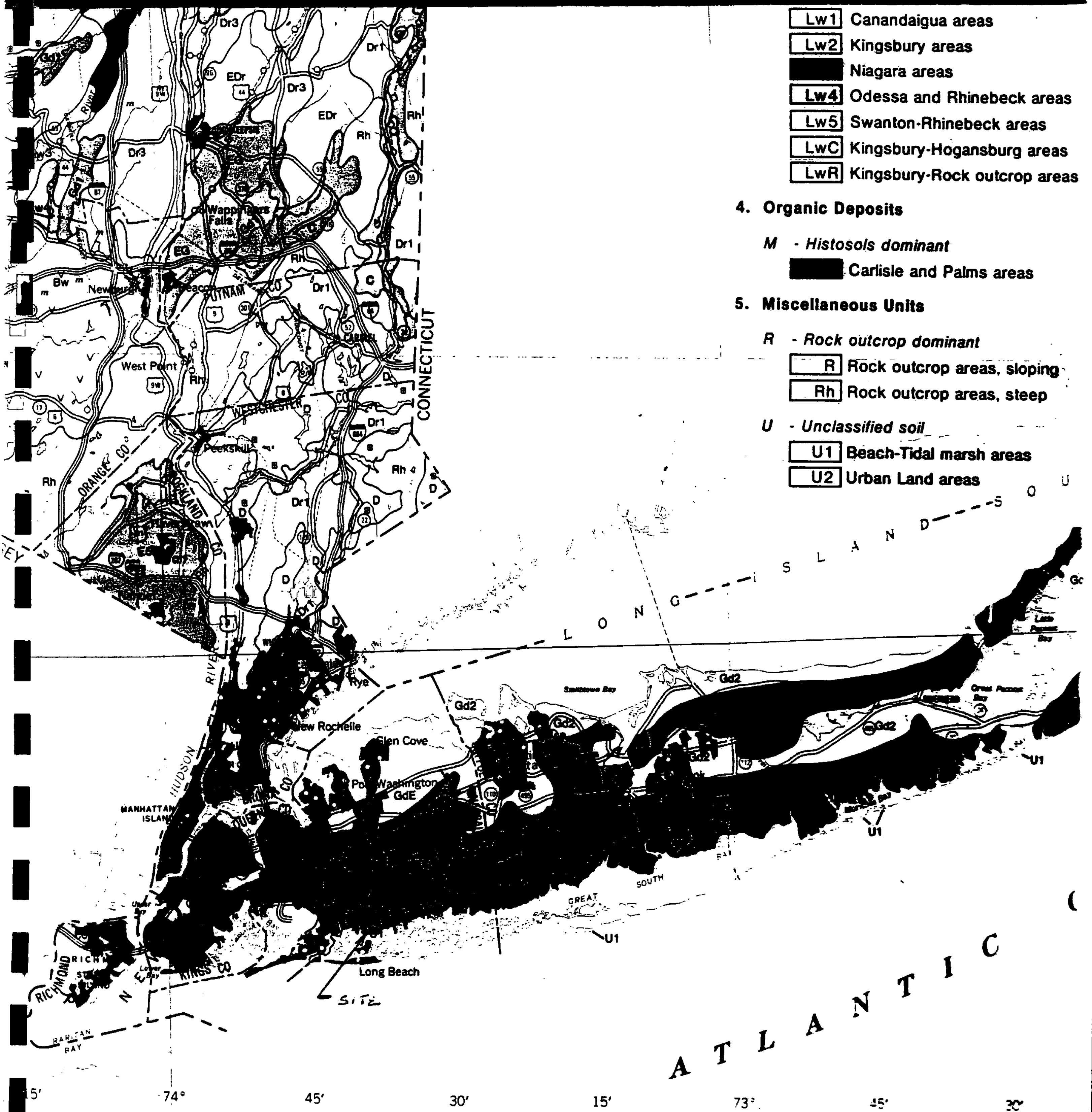
Prime Farmland Defined By USDA - SCS

- MORE THAN 75 PERCENT PRIME FARMLAND
- 25 PERCENT TO 75 PERCENT PRIME FARMLAND
- LESS THAN 25 PERCENT PRIME FARMLAND
- URBAN AREAS

SPOT SYMBOLS

- Very stony soils
- Wet soils
- Organic soils
- Sandy soils
- Rock outcrops
- Soils in outwash or alluvium
- Gravelly soils
- Soils on glacial lake beaches

45′ 30′ 15′ 76° 45′ 30′ 15′



Lw1 Canandaigua areas
Lw2 Kingsbury areas
Niagara areas
Lw4 Odessa and Rhinebeck areas
Lw5 Swanton-Rhinebeck areas
LwC Kingsbury-Hogansburg areas
LwR Kingsbury-Rock outcrop areas
4. Organic Deposits
M - Histosols dominant
Carlisle and Palms areas
5. Miscellaneous Units
R - Rock outcrop dominant
R Rock outcrop areas, sloping
Rh Rock outcrop areas, steep
U - Unclassified soil
U1 Beach-Tidal marsh areas
U2 Urban Land areas
CONNECTICUT
PUTNAM CO
WESTCHESTER CO
ORANGE CO
ROCKLAND CO
West Point
Peekskill
Newburgh
Beacon
Falls
HUDSON RIVER
MANHATTAN ISLAND
New Rochelle
Rye
Glen Cove
GdE
Gd2
U1
Long Beach
SITE
KINGS CO
RICHMOND
RARITAN BAY
Smithtown Bay
Great Peconic Bay
GREAT SOUTH BAY
LONG ISLAND SOUND
ATLANTIC
74°
45′
30′
15′
73°

REFERENCE NO. 15

Autotronic
PRODUCTS, INC.

3300 Lawson Blvd., Oceanside, N.Y. 11572
Telephone: 516-536-6765

June 24, 1987

Nassau County
Department of Health
240 Old Country Rd
Mineola, NY 11501
Att: Mr. Howard Schaefer

RE: Nassau County Public Health
Ordinance

Dear Mr. Schaefer:

Attached please find our application for a permit to operate a hazardous material storage facility.

We have enclosed Form 1 and Form 3 including a plot plan since we only store one (1) 55 gal drum at a time.

In fact, we have for the last twelve months less than ten (10) gallons of waste on-site due to a change in our use requirements and generally business slowdown.

We believe that the information is adequate to allow the county to renew our permit.

Very truly yours,

Joseph M Spadafina

Joseph M. Spadafina
President

JMS:js

RECEIVED

JUN 29 1987

NCDH — BLRM

For Office Use Only
Facility I.D. 12
☐ Municipal
☒ Non-Municipal

COUNTY DEPARTMENT OF HEALTH — NASSAU COUNTY PUBLIC HEALTH ORDINANCE - ARTICLE XI

LICATION FOR A TOXIC OR HAZARDOUS MATERIALS STORAGE FACILITY PERMIT

1 - GENERAL INFORMATION

INSTRUCTION SHEET

Check all that apply to your facility: ☐ Tank Storage ☒ Container Storage ☐ Bulk Storage ☐ Storage of Road De-icing Materials

Reason for submitting application: ☐ New ☐ Renewal ☐ Change ☐ Construction

	Street Address	Village	State	Zip	Phone
Facility Name Autotronic Products Inc.	3300 Lawson Blvd.	Oceanside	NY	11572	516-536-6765
Facility Mailing Address (If different from above) Same		Facility Contact Person (Name & Title) Joseph M. Spadafina, President			Phone "-536-6765
Facility Owner Autotronic Products, Inc.	3300 Lawson Blvd.	Oceanside	NY	11572	"-536-6765
Property Owner (If not Facility Owner) Joseph M. Spadafina	224 Windsor Lane	W. Hempstead	NY	11552	"-538-2147
Tank Owner (If not Facility Owner) N/A					

Name that should appear on Permit (Permittee)
(If different from Facility Owner)

Permittee's Street Address	Village	State	Zip	Phone
3300 Lawson Blvd.	Oceanside	NY	11572	516-536-6765

ermittee's Relationship o Facility Owner: ☒ Same ☐ Operator of Facility ☐ Other (Specify):

rincipal Property Tax Code:	School District No.	Section	Block	Lot
	011	43	380	274-290

rms Attached (heck all that apply) ☐ Form 2 - Tank Registration ☒ Form 3 - Bulk & Container Storage Registration ☐ Form 4 - Storage of Road De-icing Materials

hereby affirm under penalty of perjury that the information provided on this form and on any attached forms, atements and exhibits is true to the best of my knowledge and belief.

nt Name Signature

REFERENCE NO. 16

NUS CORPORATION
SUPERFUND DIVISION

PROJECT NOTES

TO: Autotronic Products File
DATE: 09/04/87
FROM: WSchnitzerling
COPIES:
SUBJECT: Groundwater Usage Near This Site (Oceanside, Nassau County, NY)
REFERENCE: Mr D. Myott - Nassau County Health Department - Pure Waters Division

Mr Myott is ~~resp~~ responsible for ensuring the public receives potable water. He was very familiar with the Autotronic Products site.

Drinking Water: All the drinking water within three miles of this site is drawn from the Magothy although there are three aquifers underlying this site: the Glacial, the Magothy and the Llyod. The shallow Glacial Aquifer is not used for drinking. It has been partially contaminated, because it is so shallow. (In several areas depth to groundwater is ~~only~~ only a few feet). Although the Glacial Aquifer is not used as a drinking water source, many Long Island residents have private wells. These wells are used for irrigation, car washing and other general purposes, but not for drinking. These private wells are used because supplied water is very expensive. (The Long Island Water Company supplys water for this area). The depth to the Magothy Aquifer is approximately 500 feet. This groundwater flows south towards the bays (ocean). The ~~Ac~~ Llyod Aquifer is beneath the Magothy. At this time the ~~Llo~~ Llyod is not a drinking water source for this area.

The nearest drinking water source is a well 2.5 miles Northeast of this site. It is a cluster of 3 wells, designated #50 by the Nassau County Health Department (NCHD). The well cluster supplies the village of Rockville Center with potable water. Mr Myott estimated, there are over 29,000 residents of this village. There are no drinking water sources ~~wi~~ south of this site, all the drinking water wells are north of this site.

The nearest well (designated #8483 by the NCHD) is located one half mile from Autotronic Products. It is 55' feet deep and (over) located by Oceanside School #8. According to Mr Myott, this well is used for ~~...~~ irrigation only, not drinking water.

There are no drinking water sources ~~...~~, from surface water intakes, within three miles of this site. The ~~only surface~~ nearest surface water flows past a huge landfill.

Mr Myott said the area surrounding ~~...~~ Autotronic Products is a discharge area. Groundwater does not recharge here. The majority of the water flows (runs-off) into the several bays in this section of Long Island.

NUS 4438 58 1182

REFERENCE NO. 17

NUS CORPORATION AND SUBSIDIARIES

TELECON NOTE

CONTROL NO:

DATE: 5/10/88

TIME: 1410

DISTRIBUTION:
Autotronic Products
02-8708-02-$I / NYW3$I SBS ~~NY300$I~~

BETWEEN: D. MYOTT

OF: Nassau County Health Dept Pure H2O Div.

PHONE: (516)535-2201

AND: STANLEY SCHULFER, ENVIRON. SCIENTIST

DISCUSSION:

I advised Mr. Myott that I wished to clarify some information from the interview of 9/4/87 with Mr. Schnitzerling.

1. Depth to ground water in Upper Glacial aquifer. Mr. Myott stated it runs about 5 ft. below the surface of the ground.

2. Use of upper glacial aquifer water for irrigation. Mr. Myott stated due to the shallow depth to ground water many homeowners installed their own irrigation wells by driving well points. No records of these wells exist, unless permit was obtained

ACTION ITEMS:

from NYS DEC. Permits required for well drawing greater than 45 gpm. Contact NYSDEC at:

NYSDEC
Stony Brook, NY
516-751-7900 ask for George Schilpp

NUS 087 REVISED 0685

over →

2 cont. Mr. Myott stated that every home in the area has the potential to tap the Upper Glacial aquifer in this manner.

3. Are the Upper Glacial and Magothy aquifers connected? Mr. Myott stated that in theory they are connected, however the large depth to the Magothy aquifer (≈500 ft) does cause these waters to act in an artesian manner. Therefore if there were any connection with these aquifers it would be Magothy to the Upper Glacial Aquifer. The Upper Glacial aquifer discharges to the bay. For further info., Mr. Myott recommended contacting the USGS which has studied the aquifers of L.I. extensively. I advised Mr. Myott I have already read several of their reports as background information.

Stanley B. Mest

REFERENCE NO. 18

New York

40072-A1-EI-250

N. Y.—CONN.—N. J.

1:250 000-scale map of

Atlantic Coast Ecological Inventory

Produced by

U. S. FISH AND WILDLIFE SERVICE

1980

TERRESTRIAL ORGANISMS

Shown in BROWN; species with special status shown in RED-(F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL SPECIES

PLANTS (301-350)

301 Eastern hemlock
302 Spleenwort (S)
303 Spider lily (S)
304 Pond bush (S)
305 Watermilfoil (S)
306 Hooded pitcher plant (S)
307 Tree
308 Prickly pear cactus (S)
309 Trailing arbutus (S)
310 Eastern bumelia
311 Pitcher plant
312 Baldcypress
313 Redbay
314 Seaside alder
315 Box huckleberry
316 Purple fringeless orchid
317 Pink lady's slipper
318 Ebony spleenwort (S)
319 Orchids (S)
320 Golden club (S)
321 Florida beargrass
322 East-coast coontie
323 Fall-flowering ixia
324 Jackson-vine
325 Spoon-flower
326 Curtiss milkweed
327 Sea lavender
328 Hand fern
329 Needle palm
330 Yellow squirrel-banana
331 Beach creeper
332 Florida coontie
333 Four-petal pawpaw
334 Bird's nest spleenwort
335 Burrowing four-o'clock
336 Beach star
337 Silver palm
338 Dancing lady orchid
339 Tamarindillo
340 Fuch's bromeliad
341 Everglades peperomia
342 Buccaneer palm
343 Slender spleenwort
344 Pineland jacquemontia
345 Mahogany mistletoe
346 Florida thatch
347 Twisted air plant
348 Long's bittercress
349 Venus's flytrap

INVERTEBRATES (351-400)

351 Monarch butterfly
352 Zebra butterfly

BIRDS (401-600)

SHOREBIRDS (401-430)

401 Shorebirds
402 Terns
403 Gulls
404 Forster's tern
405 Arctic tern
406 Least tern (S)
407 Roseate tern (S)
408 Common tern
409 Great black-backed gull
410 Herring gull
411 Laughing gull
412 Black skimmer (S)
413 Turnstones
414 Plovers
415 Piping plover
416 American oystercatcher (S)

431 Wading birds
4[illegible] [illegible]rons
433 Egrets
434 Rails
435 Ibises
436 Bitterns
437 Great blue heron (S)
438 Wood ibis (S)
439 Anhinga
440 Little blue heron (S)
441 Yellow-crowned night heron (S)
442 Black-crowned night heron
443 Florida sandhill crane (S)
444 Louisiana heron (S)
445 Limpkin (S)
446 Roseate spoonbill (S)
447 Snowy egret (S)
448 Magnificent frigate-bird (S)
449 Reddish egret (S)
450 Clapper rail
451 King rail
452 Virginia rail
453 Sora rail

WATERFOWL (461-500)

461 Waterfowl
462 Swans
463 Geese
464 Dabbling ducks
465 Diving ducks
466 Common eider
467 Harlequin duck
468 Wood duck
469 Fulvous tree duck
470 Loons
471 Grebes
472 Brant geese
473 Snow goose
474 Gadwall
475 Black duck

RAPTORS (501-530)

501 Raptors
502 Owls
503 Kites
504 Hawks
505 Bald eagle (F)
506 Osprey (S)
507 Peregrine falcon (F)
508 Copper's hawk (S)
509 Swallow-tailed kite
510 Marsh hawk (S)
511 Southeastern American kestrel (S)
512 Florida burrowing owl (S)

SEABIRDS (531-550)

531 Seabirds
532 Petrels, shearwaters, and albatroses
533 Pelican and allies
534 Alcids
535 Brown pelican (F)
536 Black guillemot
537 Leach's petrel
538 Razorbill
539 Common puffin
540 Double-crested cormorant
541 Gannet
542 Wilson's petrel
543 Northern phalarope
544 Audubon's shearwater
545 Greater shearwater
546 Shearwaters
547 Petrels
548 Jaegers
549 White pelican

SONGBIRDS AND OTHERS (551-600)

551 Songbirds and others
552 Red-cockaded woodpecker (F)
553 Chachalaca
554 Bachman's warbler (F)
555 Wild turkey
556 American woodcock
557 Pileated woodpecker
558 Swainson's warbler
559 Ruffed grouse
560 Bobwhite
561 Mourning dove
562 Warblers
563 Ring-necked pheasant
564 Bank swallow
565 [illegible]

REPTILES AND AMPHIBIANS (601-700)

601 Eastern narrow-mouthed toad (S)
602 Eastern indigo snake (F)
603 American alligator (F)
604 Northern diamondback terrapin
605 Amphibians
606 Greater siren
607 Bog turtle (S)
608 Gopher tortoise (S)
609 Eastern tiger salamander (S)
610 Northern fence lizard
611 Five-lined skink
612 Map turtle
613 Plymouth red-bellied turtle (F)
614 Eastern diamondback rattlesnake
615 Carolina gopher frog
616 Florida gopher frog (S)
617 Atlantic salt marsh watersnake (F)
618 American crocodile (F)
619 Florida Keys mole skink (S)
620 Florida black-headed snake (S)
621 Pine barrens tree frog (S)
622 Northern pine snake (S)
623 Corn snake (S)
624 Timber rattlesnake (S)
625 Southern gray tree frog (S)

MAMMALS (701-800)

701 Beaver
702 Whitetail deer
703 European fallow deer
704 Blackbeard Island deer
705 Opossum
706 Marsh rabbit
707 Rice rat
708 Raccoon
709 St. Simon Island raccoon
710 Mink
711 River otter (F)
712 Feral hog
713 Feral cow
714 Cumberland Island pocket gopher
715 Anastasia Island cotton mouse
716 Aquatic furbearers
717 Black bear (S)
718 Bobcat
719 Eastern gray squirrel
720 Eastern fox squirrel
721 Eastern cottontail
722 Delmarva fox squirrel (F)
723 Muskrat
724 Red fox
725 Bats
726 Gray fox
727 Striped skunk
728 Nutria
729 Longtail weasel
730 Colonial pocket gopher (S)
731 Wild ponies
732 Sika deer
733 Beach meadow vole
734 Block Island meadow vole
735 Pallid beach mouse (S)
736 Sherman's fox squirrel (S)
737 Florida mouse (S)
738 Florida panther (F)
739 Goff's pocket gopher (S)
740 Key Largo wood rat (S)
741 Lower keys cotton rat (S)
742 Key Largo cotton mouse (S)

HABITAT USE

Shown in RED for species with special status, BLUE for aquatic organisms and BROWN for terrestrial organisms

- a Spawning ground
- b Nursery
- c Commercial harvesting area
- d Adult concentration
- e Overwintering area
- f Sport fishing/hunting area
- g Migratory area
- h Nesting area
- i Unusual distribution or specimen

AC[redacted] O[redacted]SMS

Shown in BLUE; species with special status shown in RED-(F) or (S) indicates species protected by Federal or State Legislation (see text)

SYMBOL SPECIES

PLANTS (1–50)
1 Irish moss
2 Rockweed

INVERTEBRATES (51–100)
51 Crabs
52 Mussels
53 Oysters
54 Scallops
55 Clams
56 Worms
57 Shrimp
58 American lobster
59 Blue crab
60 Eastern oyster
61 European oyster
62 Bay scallop
63 Deep-sea scallop
64 Calico scallop
65 Surf clam
66 Hard clam
67 Soft shell clam
68 Brackish-water clam
69 Bloodworm
70 Sandworm
71 White shrimp
72 Brown shrimp
73 Northern shrimp
74 Rock crab
75 Jonah crab
76 Whelk
77 Ocean quahog
78 Pink shrimp
79 Stone crab
80 Spiny lobster

FISH (101–200)
101 Sharks, skates, rays
102 Herring
103 Salmon and trout
104 Catfish
105 Cod
106 Sunfish and bass
107 Drum
108 Flatfish
109 Longnose gar
110 Shortnose sturgeon (F)
111 Atlantic sturgeon (S)
112 American eel
113 Blueback herring
114 Hickory shad
115 Alewife
116 American shad (S)
117 Atlantic menhaden
118 Atlantic herring
119 Gizzard shad
120 Tarpon
121 Atlantic salmon
122 White catfish
123 Channel catfish
124 Yellow bullhead
125 Brown bullhead
126 Flat bullhead
127 Sea catfish
128 White perch
129 Striped bass
130 Black sea bass
131 Redbreast sunfish
132 Warmouth
133 Bluegill
134 Largemouth bass
135 Black crappie
136 Sheepshead
137 Spotted seatrout
138 Weakfish
139 Spot
140 Atlantic croaker
141 Southern kingfish
142 Northern kingfish
143 Gulf kingfish
144 Red drum
145 Star drum
146 Black drum
147 Summer flounder
148 Southern flounder
149 Winter flounder
150 Rainbow smelt
151 Atlantic tomcod
152 Threadfin shad
153 Carp
154 Atlantic mackerel
155 Chain pickerel
156 White bass
157 Northern puffer
158 Silver perch
159 Florida pompano
160 Bluefish
161 Spanish mackerel
162 Cobia
163 Mullet
164 White crappie
165 Redear sunfish
166 Smallmouth bass
167 Yellow perch
168 Pumpkinseed
169 Atlantic halibut
170 Atlantic cod
171 Pollock
172 Haddock
173 Hake
174 Bluefin tuna
175 Walleye
176 Northern pike
177 Scup
178 Tautog
179 Atlantic spadefish
180 Bay anchovy
181 Butterfish
182 Little tunny
183 Atlantic bonito
184 Brown trout
185 Cunner
186 Yellowtail flounder
187 Gulf flounder
188 Pinfish
189 King mackerel
190 Pigfish
191 White grunt
192 Tripletail
193 Ladyfish
194 Snook
195 Jack
196 Snapper
197 Grouper
198 Sailfish
199 Great barracuda
200 Maryland darter (F)

REPTILES AND AMPHIBIANS (201–250)
201 Green sea turtle (F)
202 Loggerhead sea turtle (F)
203 Hawksbill turtle (F)
204 Atlantic ridley turtle (F)
205 Leatherback turtle (F)

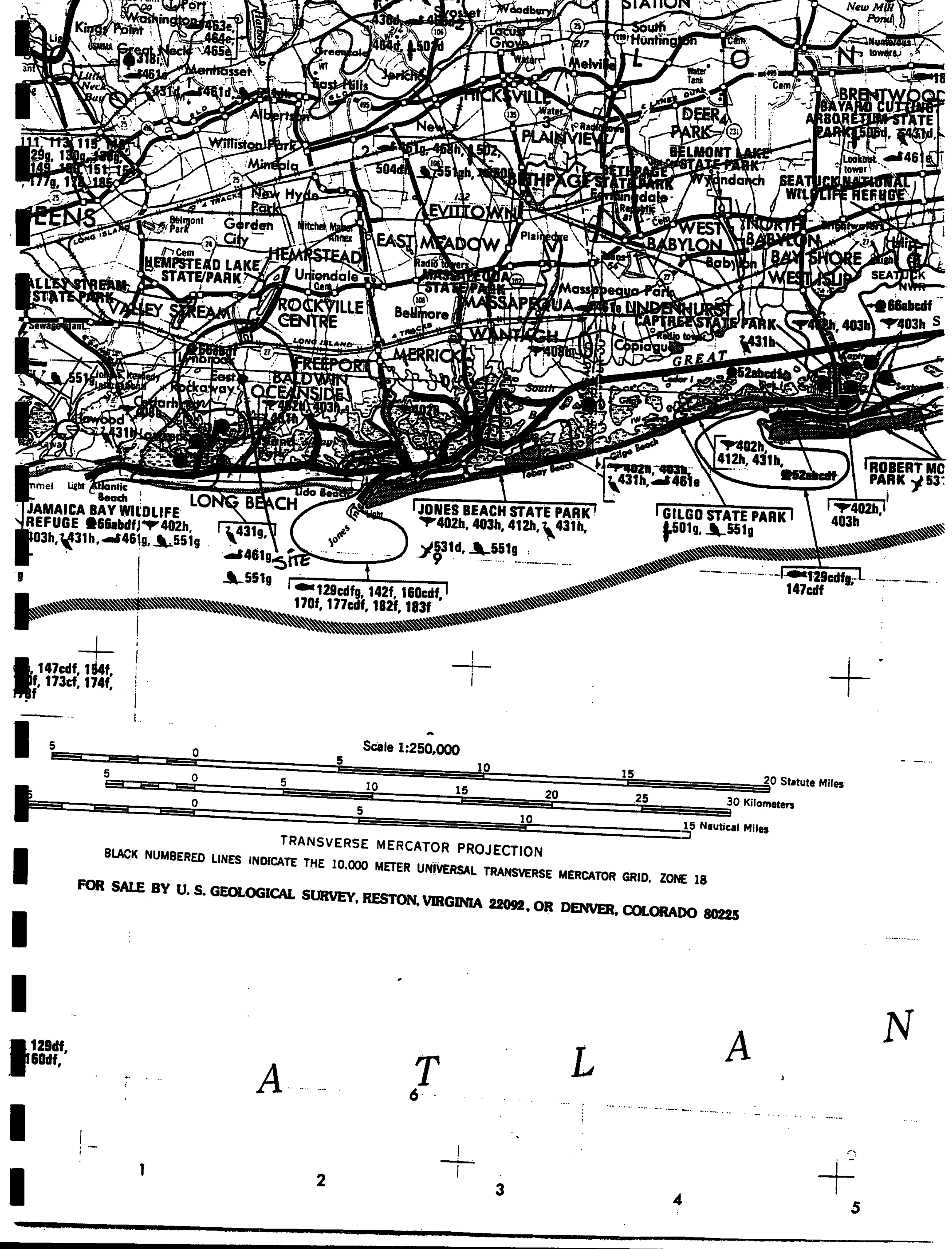
MAMMALS (251–300)
251 Florida manatee (F)
252 Atlantic bottlenose dolphin
253 Pigmy sperm whale
254 Short-finned pilot whale
255 Harbor seal
256 Gray seal
257 Right whale (F)
258 Atlantic spotted dolphin

High salinity estuarine habitat (generally 16.5 to 30 parts per thousand); arrows used for wide estuaries.

Mid salinity estuarine habitat (generally 5 to 16.5 parts per thousand).

Low salinity estuarine habitat (generally 0.5 to 5 parts per thousand) and tidal freshwater.

Non-tidal freshwater riverine and creek habitat.



Kings Point
Great Neck
Manhasset
Syosset
Woodbury
South Huntington
Melville
New Mill Pond
Numerous towers
East Hills
Jericho
HICKSVILLE
Albertson
Williston Park
Mineola
New Hyde Park
PLAINVIEW
DEER PARK
BRENTWOOD
BAYARD CUTTING ARBORETUM STATE PARK
BELMONT LAKE STATE PARK
BETHPAGE STATE PARK
Wyandanch
Farmingdale
SEATUCK NATIONAL WILDLIFE REFUGE
Lookout tower
LEVITTOWN
Belmont Park
Garden City
Mitchel Manor Annex
EAST MEADOW
Plainedge
WEST BABYLON
NORTH BABYLON
Babylon
Brightwaters
BAY SHORE
WEST ISLIP
HEMPSTEAD LAKE STATE PARK
HEMPSTEAD
Uniondale
Radio towers
MASSAPEQUA STATE PARK
Massapequa Park
MASSAPEQUA
LINDENHURST
VALLEY STREAM STATE PARK
VALLEY STREAM
ROCKVILLE CENTRE
Bellmore
CAPTREE STATE PARK
WANTAGH
Copiague
Radio tower
Sewage plant
Lynbrook
FREEPORT
MERRICK
GREAT
East Rockaway
BALDWIN
OCEANSIDE
Cedarhurst
Inwood
Gilgo Beach
Tobay Beach
Atlantic Beach
Lido Beach
LONG BEACH
Jones
JAMAICA BAY WILDLIFE REFUGE 66abdf, 402h, 403h, 431h, 461g, 551g
431g, 461g
SITE
551g
JONES BEACH STATE PARK 402h, 403h, 412h, 431h, 531d, 551g
129cdfg, 142f, 160cdf, 170f, 177cdf, 182f, 183f
402h, 403h, 431h, 461e
402h, 412h, 431h, 52abcdf
GILGO STATE PARK 501g, 551g
402h, 403h
129cdfg, 147cdf
ROBERT MO... PARK
SEATUCK NWR
66abcdf
402h, 403h
403h
431h
52abcdfg
408h
402h, 403h
402h
147cdf, 154f, 173cf, 174f
129df, 160df
Scale 1:250,000
20 Statute Miles
30 Kilometers
15 Nautical Miles
TRANSVERSE MERCATOR PROJECTION
BLACK NUMBERED LINES INDICATE THE 10,000 METER UNIVERSAL TRANSVERSE MERCATOR GRID, ZONE 18
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092, OR DENVER, COLORADO 80225
A T L A N
1
2
3
4
5
6

REFERENCE NO. 19

New York State Department of Environmental Conservation

MEMORANDUM

RECEIVED

MAY 23 1983

ENVIRONMENTAL QUALITY
REGION 1

TO: Al Machlin
FROM: Rocky J. Piaggione RJP
SUBJECT: Autotronics, Inc.

DATE: 5/20/83

Please be advised that the enclosed Order-on-Consen was sent to the above-named company on May 20, 1983. The case involves a relatively minor illegal disposal of 1,- trichlorethane. If you have any questions, you can re me at (914)761-6660.

RJP/jg

STATE OF NEW YORK : DEPARTMENT OF ENVIRONMENTAL CONSERVATION

In the Matter of the Development and Implementation of Remedial Measures under Article 71 Title 27 of the Environmental Conservation Law of the State of New York (the "ECL") by

PETRON PRODUCTS, INC.

d/b/a AUTOTRONIC PRODUCTS, INC.

Respondent

ORDER ON CONSENT

WHEREAS:

1. Respondent owns and operates an industrial facility located at 3300 Lawson Boulevard, Oceanside, County of Nass[illegible] State of New York (the "Facility").

2. Respondent disposed of industrial wastes without p[illegible] on the southeastern portion of the real property immediatel[illegible] adjacent to the Facility ("the Site").

3. [illegible] the Department [illegible] purposes and goals of this Order shall be:

a) The development and implementation of a field investigation to determine whether wastes disposed of at the Site presently constitute a significant threat to the environment.

b) The determination of whether remedial action i[illegible] [illegible] at the Site; and

c) If remedial action is necessary at the Site, the development, implementation, administration and maintenance of a Disposal Site remedial program as defined by ECL Section 27-1301(3), in order to abate any present significant threat to the environment occurring as a result of wastes disposed of at the Site.

4. Respondent hereby consents to the issuing and entering of this Order, waives ~~its right to a hearing herein,~~ and agrees to be bound by the terms, provisions and conditions hereof. Respondent reserves its right to contest, by an action at law or equity, in a court of competent jurisdiction, any final determination of the Department made pursuant to, and subsequent to the effective date of this Order. In the event Respondent elects to contest any final determination of the Department, Respondent may commence such action at law or equity without exercising any right Respondent may have to administrative review of such determination. The Department agrees that in the event the Respondent shall elect to contest any final determination of the Department, by an action in a court of competent jurisdiction, that the Department will not raise, as a defense to such action, that Respondent has not exhausted all of the administrative remedies available to it.

NOW, having considered this matter and being duly advised, it is ORDERED THAT:

5. Respondent pay a civil penalty in the amount of one thousand dollars ($1,000.00) to the Department by certified check or money order made out to the Commissioner of the Department of Environmental Conservation, and sent to the Department.

6. Respondent shall have all industrial-commercial wastes generated by the Facility removed by a Department permitted industrial waste scavenger.

7. Within 45 (forty-five) days after the effective date of this Order, Respondent shall perform a field investigation at the Site, and shall submit to the Department a field investigation report (the "Report") which shall contain all data generated and all other information obtained during the field investigation, and shall include, but not be limited to, the following specific information:

(a) A plot plan of the Site showing property lines, [illegible] lines and building locations.

(b) A minimum of two soil borings at a minimum of twelve inches in depth shall be taken from the southwestern portion of the site, near the fence, under Department supervision. Said soil samples shall be sent to a laboratory for analysis subject to Department approval.

(c) Said soil samples shall be transported to the laboratory under chain-of-custody and in accordance with all applicable regulations. Said soil samples shall be preserved at 4° C. at all times from collection until [illegible] and shall be analyzed within 14 days from time of collection.

(d) Said soil samples shall be analyzed in accordance with EPA SW-611 Method 5030 Purge-and Trap and Method 8010 Halogenated Volatile Organics. The specific compounds to be identified include, but are not limited to: 1,1,1-trichloroethane.

(e) All data collected and used in preparing the Report, including, but not limited to: soil boring logs and the analytical results of chemical tests performed on samples obtained from the Site.

8. Within thirty (30) days of the Department's receipt of the Report, the Department shall determine whether any remedial measures are appropriate and necessary, pursuant to the provisions of Section 71-2727 (1) of the ECL. Such remedial measures, if any, may include, but need not be limited to, additional field investigation. The Department hereby explicitly reserves the right to require additional field investigation to address specific off-site areas. Respondant shall undertake such remedial measures the specific requirements of which shall be incorporated in and made a part of this Order, and shall be attached hereto as an appendix.

9. All investigations, reports, plans and remedial measures required by this Order shall be prepared, designed and executed through the application of Requisite Technology. As used in this Order, Requisite Technology means accepted engineering, scientific

and construction principles and practices, subject to the Department's approval, which are technologically feasible and which will be most effective in carrying out the purposes and goals of this Order, and of any appendices hereto.

10. The Department shall have the right to obtain "split samples" of all substances and materials sampled by Defendant pursuant to this Order. As used herein, "split samples" shall mean whole samples divided into aliquots, to be tested by the Department for the purpose of comparative analysis.

11. Respondent shall provide notice to the Department of any excavating, drilling or sampling to be conducted pursuant to the terms of this Order at least five working days in advance of such activities.

12. Respondent shall permit any duly designated officer, employee, consultant, contractor or agent of the Department to enter upon the Site and to make or cause to be made such tests as are determined by the Department to be reasonably necessary and to ascertain Respondent's compliance or non-compliance with this Order.

13. Respondent shall not be in default of compliance with this Order if Respondent is unable to comply with any provision of this Order because of the action of national or local government body or court, an act of God, war, strike, riot, or catastrophe as to any of which negligence or willful misconduct on the part of Respondent [illegible]

shall apply in writing to the Department immediately upon obtainin knowledge of such an event and request an appropriate modification to this Order.

14. All reports and submissions herein required shall be made to the New York State Department of Environmental Conservatio Division of Hazardous Waste Enforcement, 202 Mamaroneck Avenue, Room 304, White Plains, New York 10601-5381.

15. The effective date of this Order shall be the date this Order is signed by the Commissioner or his designee.

16. The provisions of this Order shall be deemed to bind Respondent, its agents, employees, successors and assigns, and all persons, firms and corporations acting under or for Respondent

DATED: Albany, New York

HENRY G. WILLIAMS, Commissioner
New York State Department of
Environmental Conservation

CONSENT BY RESPONDENT

Respondent hereby consents to the issuing and entering of the foregoing Order, waives its right to a hearing herein as provided by law, and agrees to be bound by the provisions, terms and conditions contained herein.

PETRON PRODUCTS, INC.

d/b/a AUTRONIC, INC.

By: ______________________

Title: ______________________

Date: ______________________

STATE OF NEW YORK)
) s.s.:
COUNTY OF)

On this day of , 1983 before me personally came , to me known, who, being by me duly sworn, did depose and say that he resides in : that he is the of the corporation described in and which executed the foregoing instrument; that he knew the seal of said corporation; that the seal affixed to said instrument was such corporate seal; that it was so affixed by the order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

____

NOTARY PUBLIC

REFERENCE NO. 20

CHEMICAL/SOLVENT WASTE REPORT

For each shipment of wastes, complete the following table with the indicated information. ATTACH COPIES OF MANIFESTS OR RECEIPTS FROM SCAVENGER FOR EACH SHIPMENT MADE.

Date of Shipment	Type of Waste (Chemical, oil or solvents)	Amount Shipped	Shipped By			Shipped To (Final Disposal Site For Waste)
			Scavenger Name	Scavenger Address	Scavenger Number	
6/7/85	Trichlorethane	220 gal	Chemical Pollution	120 South Fourth Street Brightl	21635-6T	

List any accidental spills that occurred during the reporting period:

Date of Spill	Amount of Spill	Describe the nature of spill

RECEIVED
FEB 20 1986
NCDH
BLRM

Signature of Company Representative [illegible] | Title [illegible] | Date: [illegible]

REFERENCE NO. 21

CHEMICAL/SOLVENT WASTE REPORT

For each shipment of wastes, complete the following table with the indicated information. ATTACH COPIES OF MANIFESTS OR RECEIPTS FROM SCAVENGER FOR EACH SHIPMENT MADE.

Date of Shipment	Type of Waste (Chemical, oil or solvents)	Amount Shipped	Shipped By			Shipped To (Final Disposal Site For Waste)
			Scavenger Name	Scavenger Address	Scavenger Number	
11/26/87	Trichloroethane	55 gal Drum	Pride Solvents	78-88 LAMAR ST W. Babylon, NY 11704	#0212	Pride Solvents

List any accidental spills that occurred during the reporting period:

Date of Spill	Amount of Spill	Describe the nature of spill

Signature of Company Representative [illegible signature] | Title Production Supervisor | Date: 7/1[illegible]

EH 704A 1/80

REFERENCE NO. 22

ID# 00012

HEMICAL/SOLVENT WASTE REPO

Bureau of Land Resources Management

assau County Department of Health

Name: Autotronic Productions

Address: 3300 Lawson Blvd Oceanside

Permit Number: 295

Report Period: 85

ist all waste generating chemicals and/or solvents purchased during the reporting period. ndicate for each the purpose or use, trade name or supplier and the quantity purchased.

Name of Chemical or Solvent	Purpose or Use	Trade Name or Supplier	Quantity Purchased
433 Protective Coating	to coat P.C.B Bds	Humiseal	2 gals
47 Stripper	to strip coating off P.C.B.	Humiseal	1 gal
richlothane III	Clean Electronic Parts	Pride Solvents	55 gal
"	"	Sanford Chemical	1 gal
Tol TT 548D	To thin out Coating	Randolph Prods Co.	4 gals

704 1/82

continued on reverse

REFERENCE NO. 23

NASSAU COUNTY
DEPARTMENT of HEALTH

SOLID WASTE MANAGEMENT FACILITY PERMIT

Permit Number 104 | Date Issued February 6, 1984 | Expiration Date February 6, 1985

Type of Permit: ☐ Construction ☒ Operation ☒ Initial Issue ☐ Renewal ☐ Modification

Name of Facility: Autotronic Products, Inc.	Name of Permittee: Same
Address of Facility: 3300 Lawson Blvd, Oceanside, N.Y. 11572	
Description of Facility: Mfg. Electronic Equipment	On-Site Supervisor: Mr. Clifford Bateman

GENERAL CONDITIONS

1. The permittee shall file in the office of the Nassau County Dept. of Health a notice of intention to commence work at least 48 hours in advance of the time of commencement and shall also notify said office promptly in writing of the completion of the work.
2. The permitted work shall be subject to inspection by an authorized representative of the Department who may order the work suspended if the public interest so requires.
3. As a condition of the issuance of this permit, the applicant has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and has agreed to indemnify and save harmless the County from suits, actions, damages and costs of every name and description resulting from the said project.
4. All work carried out under this permit shall conform to the approved plans and specifications. Any amendments must be approved by the Nassau County Department of Health prior to their implementation.
5. The permittee is responsible for obtaining any other permits, approvals, easements and rights-of-way which may be required for this project.
6. By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with Article IX, Nassau County Public Health Ordinance and the special conditions cited below.

SPECIAL CONDITIONS

Authorizing Officer

John J. Dowling, MD

John J. Dowling, M.D., M.P.H. Commissioner of Health

EH 7?? 11/83

THIS PERMIT MUST BE POSTED IN A CONSPICUOUS PLACE AT THE FACILITY

DH-4488. 11/83

NASSAU COUNTY

DEPARTMENT of HEALTH

SOLID WASTE MANAGEMENT FACILITY PERMIT

Permit Number 295 Date Issued February 7, 1985 Expiration Date February 6, 1986

Type of Permit: ☐ Construction ☒ Operation ☐ Initial Issue ☒ Renewal ☐ Modification

Name of Facility: Autotronic Products, Inc. Name of Permittee: Same

Address of Facility: 3300 Lawson Blvd., Oceanside, New York 11572

Description of Facility: Mfg. electronic equipment On-Site Supervisor: Mr. Clifford Bateman

GENERAL CONDITIONS

1. The permittee shall file in the office of the Nassau County Dept. of Health a notice of intention to commence work at least 48 hours in advance of the time of commencement and shall also notify said office promptly in writing of the completion of the work.
2. The permitted work shall be subject to inspection by an authorized representative of the Department who may order the work suspended if the public interest so requires.
3. As a condition of the issuance of this permit, the applicant has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and has agreed to indemnify and save harmless the County from suits, actions, damages and costs of every name and description resulting from the said project.
4. All work carried out under this permit shall conform to the approved plans and specifications. Any amendments must be approved by the Nassau County Department of Health prior to their implementation.
5. The permittee is responsible for obtaining any other permits, approvals, easements and rights-of-way which may be required for this project.
6. By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with Article IX, Nassau County Public Health Ordinance and the special conditions cited below.

SPECIAL CONDITIONS

None

Authorizing Officer John J. Dowling, MD

John J. Dowling, M.D., M.P.H. Commissioner of Health

EH 768 11/83

THIS PERMIT MUST BE POSTED IN A CONSPICUOUS PLACE AT THE FACILITY

DH-4488. 11/83

REFERENCE NO. 24

LONG ISLAND WATER RESOURCES
BULLETIN NUMBER 1

RESULTS OF SUBSURFACE EXPLORATION IN THE MID-ISLAND AREA OF WESTERN SUFFOLK COUNTY, LONG ISLAND, NEW YORK

BY
JULIAN SOREN
U. S. GEOLOGICAL SURVEY

WITH A SECTION ON
POTENTIAL DEVELOPMENT OF GROUNDWATER
IN THE MID-ISLAND AREA

BY
PHILIP COHEN
U. S. GEOLOGICAL SURVEY

PREPARED BY

U. S. GEOLOGICAL SURVEY

IN COOPERATION WITH

SUFFOLK COUNTY LEGISLATURE
SUFFOLK COUNTY WATER AUTHORITY

PUBLISHED BY

SUFFOLK COUNTY WATER AUTHORITY

1971

UPPER CRETACEOUS SERIES

Raritan Formation

Lloyd Sand Member

The Lloyd Sand Member of the Raritan Formation comprises the Lloyd aquifer in Long Island. This unit consists mostly of beds and lenses of light- to medium-gray sand and gravelly sand, commonly containing small to large amounts of interstitial clay and silt, that are intercalated with beds and lenses of light- to dark-gray clay, silt, and clayey and silty sand.

Only two drill holes are known to have penetrated the Lloyd in the mid-island area. One hole partly penetrated the unit at the Pilgrim State Hospital, in Brentwood. The second hole, which is in the village of Lake Ronkonkoma, and which was one of the test holes drilled as part of this study, fully penetrated the unit. A log of the test hole describing lithology of the Lloyd is shown in table 1, S33379.

The surface of the Lloyd is roughly parallel to the bedrock surface. The Lloyd surface dips from an altitude of about 550 feet below sea level in the northwestern part of the area, to an altitude of about 1,250 feet below sea level in the southeastern part (pl. 2), and the unit's thickness ranges from about 260 feet to 360 feet from northwest to southeast, respectively. Plate 2 shows contours on the Lloyd surface. Plate 2 also shows contours on the bedrock surface; therefore, the Lloyd's thickness, in any part of the area, can be estimated by computing the local difference between the altitudes of the bedrock and Lloyd surfaces.

The Lloyd aquifer is moderately permeable. Its average horizontal permeability has been estimated by Lusczynski and Swarzenski (1966, p. 19), Isbister (1966, p. 20), and Soren (in press) to range between 400 and 500 gpd per sq ft (gallons per day per square foot) in Queens and Nassau Counties, west of the mid-island area. Warren and others (1968, p. 102) estimated the Lloyd's horizontal permeability to be 165 gpd per sq ft at the Brookhaven National Laboratory, about 12 miles east of the mid-island area. The section of Lloyd penetrated by the test well near Lake Ronkonkoma was fairly sandy and gravelly (table 1, S33379), and at this site the average horizontal permeability of the Lloyd probably is considerably more than 500 gpd per sq ft. Wells tapping the Lloyd in other parts of Long Island have been pumped at rates of as much as 1,600 gpm (gallons per minute), and the specific capacities of these wells (pumpage, in gallons per minute, divided by drawdown, in feet) have been reported to range from 3 to 40 gpm per foot of drawdown.

At present, there is no pumpage from the Lloyd aquifer in the mid-island area, mainly because of the great depth of the aquifer, and because more permeable aquifers are found at shallower depths. In addition to being at greater depth, the water from the Lloyd commonly has undesirably high concentrations of iron.

Clay Member

The clay member of the Raritan Formation (commonly referred to as the Raritan clay) completely covers the underlying Lloyd aquifer in the mid-island area, and confines water in that aquifer. The Raritan clay consists mostly of beds and lenses of light- to dark-gray clay, silt, and clayey and silty fine sand (table 1). Thin to thick sandy beds commonly occur in the unit from place to place, but these beds do not have great lateral extent. Laminae and thin beds of lignite and pyrite and disseminated particles of these substances are common in the clay beds of the unit. The thickness of the Raritan clay increases to the southeast, and ranges from about 150 feet in the northwestern part of the mid-island area to about 200 feet in the southeastern part.

The surface of the Raritan clay is roughly parallel to that of the underlying Lloyd Sand Member. The altitude of the surface of the Raritan clay ranges from about 300 feet below sea level in the northwestern part of the mid-island area, to about 1,050 feet below sea level in the southeastern part (pl. 3).

Matawan Group-Magothy Formation, Undifferentiated

The Matawan Group-Magothy Formation, undifferentiated, comprises the Magothy aquifer of Long Island. Deposits in this unit consist of beds and lenses of light-gray fine to coarse sand, containing traces to large amounts of interstitial clay and silt, intercalated with thin to thick beds and lenses of light- to dark-gray clay, silt, and clayey and silty sand (table 1). The clay and silt beds commonly contain laminae and thin beds of lignite. Disseminated lignite and pyrite also are common in the sand beds of the aquifer. Gravelly coarse sand is commonly found in the basal part of the aquifer. This coarse zone ranges in thickness from 100 to 150 feet west of the mid-island area to 150 to 200 feet in the mid-island area. The basal zone also commonly contains abundant interstitial clay and silt and many thin to thick beds and lenses of clay, silt, and clayey and silty sand.

The surface of the Magothy aquifer (pl. 4) is not planar as are the surfaces of the underlying units. The Magothy surface was deeply eroded during Tertiary time, and probably was considerably eroded in Pleistocene time. Consequently, the depth to the Magothy aquifer and the aquifer's thickness cannot be predicted as accurately as the depths and thicknesses of the underlying units. Many control points in addition to those already known are needed to accurately map the upper surface of the Magothy aquifer.

The highly irregular character of the surface of the Magothy aquifer is shown in plate 4. The upper surface of the aquifer ranges in altitude from as high as about 200 feet above sea level to as low as about 500 feet below sea level. The Magothy was completely removed by erosion in a buried valley near the South Huntington area, and in that area upper Pleistocene deposits lie directly on the Raritan clay. This buried valley was called the "Huntington buried valley" by Lubke (1964, pl. 3), and as mapped by Lubke, the valley extended about 2-1/2 miles south of the Northern State Parkway.

Information from wells drilled after Lubke's investigation indicates that the Huntington buried valley continues southeastward, joining another buried valley in the Deer Park area. From Deer Park, the valley appears to extend southeastward across Long Island to the Fire Island Pines area of Fire Island, about 10 miles southeast of Deer Park, where the Magothy surface was shown to be about 350 feet below sea level by Perlmutter and Todd (1965, pl. 8).

The Huntington and Deer Park buried valleys are separated by a divide across the buried valley system in the Deer Park area. The Huntington buried valley slopes steeply northwestward from the divide; the Deer Park buried valley has a gentle southward slope toward the Fire Island Pines area. The divide across the valley approximately coincides with the southern margin of the Ronkonkoma terminal moraine. (See the following section, "Pleistocene Series.") The steeper Huntington buried valley was probably overdeepened by scouring action of Pleistocene glaciation. Other buried valleys in the northern part of the mid-island area (pl. 4) are not as deep nor as extensive as the Huntington and Deer Park buried valleys.

A large depression in the Magothy surface is apparent in the St. James-Ronkonkoma area. Lubke (1964, pl. 3) showed the Magothy surface to be more than 200 feet below sea level in this area. More recent information indicates that the Magothy surface in this area is more than 500 feet below sea level (pl. 4). This large depression is here called the Ronkonkoma basin (pls. 4-5). The precise origin of this basin is not known, but it probably was at least partly a result of Pleistocene glacial scouring of a pre-existing valley system. The depression appears to have had no outlet, and its southernmost end coincides approximately with the southern margin of the Ronkonkoma terminal moraine.

Representative thicknesses of the Magothy aquifer are shown in geologic sections in plate 5. In these sections, the thickness of the Magothy ranges from about 300 to 800 feet. The estimated thickness of the Magothy aquifer in any part of the mid-island area can be computed by determining the difference between altitudes of the Magothy and Raritan surfaces as shown in plates 3 and 4. The Magothy aquifer is thickest (about 950 feet) in the southeastern corner of the project area, and it is thinnest in the bottom of the buried valleys. As previously noted, the aquifer is completely missing in part of the buried valley near South Huntington (pl. 4).

The permeability of the Magothy aquifer ranges widely. The estimated average horizontal permeability of the aquifer is about 500 gpd per sq ft in Nassau and Queens Counties (Lusczynski and Swarzenski, 1966, p. 19; Isbister, 1966, p. 23-24; and Soren, in press); however, the permeabilities of some beds in the aquifer may be as high as 2,000 gpd per sq ft (Isbister, 1966, p. 23). Public-supply wells screened in the Magothy aquifer of the mid-island area have yielded as much as 1,700 gpm, with specific capacities ranging from about 14 to 85 gpm per ft of drawdown.

PLEISTOCENE SERIES

Upper Pleistocene deposits

Pleistocene deposits of glacial origin mantle the surface of the mid-island area (pl. 1) and range in thickness from a few tens of feet in some localities to more than 600 feet in buried valleys. The approximate thickness of Pleistocene deposits at any place generally can be computed by determining the difference between the altitude of the land surface and the altitude of the surface of the Magothy aquifer.

Most and perhaps all the glacial materials on Long Island were deposited in Wisconsin time, and these materials generally are collectively termed upper Pleistocene deposits. The upper Pleistocene deposits in the mid-island area include terminal moraines, outwash deposits, ground moraine, and lake deposits. The Harbor Hill and Ronkonkoma terminal moraines form the irregular ridges trending east-northeast across the area. Outwash deposits derived from melted glacial ice lie south of the Ronkonkoma terminal moraine. Glacial lake deposits, which apparently were formed between the Ronkonkoma and Harbor Hill advances of the glaciers, lie within outwash deposits below the land surface, and occur mostly between the terminal moraines in the eastern half of the area, most notably in the Smithtown-St. James-Ronkonkoma area.

Ronkonkoma Terminal Moraine

The Ronkonkoma terminal moraine marks the farthest advance of glaciation on Long Island. The moraine is composed largely of crudely stratified sand and gravel. It underlies the highest parts of the mid-island area, tapering from an irregular broad band in the western part, to an irregular narrow ridge in the eastern part. (See plate 1.) The unit lies mostly above the water table and is, therefore, practically of no significance as a source of ground water; however, it is a difficult unit to drill through because of the large amounts of gravel, cobbles, and scattered boulders that it contains.

Harbor Hill Terminal Moraine

Only a very small part of this moraine is found in the mid-island area, in the extreme northwest corner near South Huntington (pl. 1). Most of this moraine is north of the mid-island area. The moraine's lithology and water-bearing characteristics are similar to those of the Ronkonkoma terminal moraine.

Outwash Deposits

The outwash deposits, which are found south of the Ronkonkoma terminal moraine and between the Harbor Hill and Ronkonkoma terminal moraines (fig. 2), are beds of sand and gravel that were deposited by glacial melt water. The source of the rock materials in the outwash deposits is manifold. As the glaciers moved southward to Long Island, they plucked the bedrock and soils of the surfaces they slid over. Rock materials were incorporated into the ice in contact zones and were also pushed along the glacial front. As the ice melted in late Pleistocene time, the various rock materials were carried away by broad coalescing streams and sheets of water. Consequently, the outwash deposits are stratified, and because of the varied materials carried by the glacier, these deposits consist of a heterogeneous suite of rock types. The great diversity of rock and mineral suites in the Pleistocene deposits, along with the chemically unstable (easily decomposed) rocks and minerals, commonly facilitates differentiation of glacial from the Cretaceous deposits on Long Island.

Outwash deposits underlie the plain in the mid-island area south of the Ronkonkoma terminal moraine, where the major source of glacial deposition was material from the Ronkonkoma ice advance. A readvance of the glacial front followed recession of the Ronkonkoma ice front and resulted in the formation of the Harbor Hill terminal moraine. Lakes were formed in depressions and valleys between the Ronkonkoma and Harbor Hill terminal moraines, and clayey materials were deposited in these lakes. The intermorainal areas also contain recessional deposits of outwash and ground moraine (see the following section, "Ground-Moraine Deposits") from the Ronkonkoma and Harbor Hill deglaciations, and these materials buried the clayey lake deposits.

The outwash deposits are thickest in the buried valleys and thinnest where the Cretaceous surface is closest to land surface (pl. 5). These deposits generally extend below the water table, and are a major source of ground water. Outwash deposits comprise most of the so-called upper glacial aquifer of Long Island, and because these deposits of sand and gravel contain virtually no interstitial clay and silt, the upper glacial aquifer is the most permeable aquifer on Long Island. The estimated average horizontal permeability of the outwash deposits is about 1,000 to 1,500 gpd per sq ft (Lusczynski and Swarzenski, 1966, p. 17; and Soren, in press). Warren and others (1968, p. 75) computed the horizontal permeability of outwash to be about 1,300 gpd per sq ft at the Brookhaven National Laboratory, east of the mid-island area. A horizontal permeability for outwash as high as about 2,500 gpd per sq ft has been reported in Nassau County, west of the project area (Isbister, 1966, p. 29).

Public-supply and other high-capacity wells screened in glacial outwash on Long Island have yielded as much as 1,700 gpm, and reported specific capacities of such wells range from less than 10 gpm per foot of drawdown to as much as about 200 gpm per foot of drawdown; however, the specific capacities range mostly from 50 to 100 gpm per foot of drawdown. (See section "Yields of Individual Wells.")

Ground-Moraine Deposits

Ground-moraine deposits commonly consist of unstratified and unsorted clay, silt, sand, gravel, cobbles, and boulders, deposited on the land surface as the glacial fronts receded. Ground-moraine deposits from the Ronkonkoma advance probably occur beneath the outwash in the area between the Ronkonkoma and Harbor Hill terminal moraines. Some ground-moraine deposits probably were partly reworked by glacial melt water from the Harbor Hill advance and probably appear similar to outwash in drilling samples.

Lake Deposits

A large lake apparently existed between the Ronkonkoma and Harbor Hill terminal moraines in the previously described Ronkonkoma basin. Deposits of light- to dark-brown and gray clay and silt of lacustrine origin, with some included beds of sand and gravel, occur between deposits of outwash in this area. The deposits are informally known as the Smithtown clay unit or Smithtown clay, and they were mapped and described by Lubke (1964, p. 22 and 26) as the "clay unit of Smithtown." Thin to significant thicknesses of this unit were penetrated at four of the test-drilling sites in the eastern half of the mid-island area. (See plate 5 and table 1, S22577, S22910T, S24769, and S24772). Apparently, it is thickest near the community of Lake Grove (not shown in plate 1) about 2.5 miles north of Lake Ronkonkoma, where about 300 feet of Pleistocene clay beds were penetrated in a drilled test hole (Jensen, H. M., oral commun., 1969).

Smaller glacial lakes probably also existed in other parts of the intermorainal area. Many drilling logs from localities in the area indicate thin intercalated clay and fine sand beds between sand and gravel deposits. The extent of these lakes is not fully known, and they were probably small compared to the lake in which the Smithtown clay was deposited.

Veatch and others (1906, p. 61) suggested that present Lake Ronkonkoma, in the eastern part of the mid-island area, is in a depression made by a large ice block that was detached from the main glacial-front mass and buried by outwash deposits. Subsequent melting of the ice block presumably caused the depression in the land surface which then filled with water. Inasmuch as this study has shown that present Lake Ronkonkoma is in the Ronkonkoma basin, it seems possible that the location of the lake may merely reflect the fact that the ancient Ronkonkoma basin was not completely filled by glacial deposits.

The lake deposits do not yield significant quantities of water to wells because they are fine-textured and, accordingly, poorly permeable. However, the lake beds are hydrologically significant because they confine water in the underlying outwash deposits.

Miscellaneous Deposits

The Mannetto Gravel, of Pliocene age, and the Gardiners Clay, a Pleistocene interglacial marine deposit of pre-Wisconsin age, are two additional units of hydrologic signifiance in some parts of Long Island. However, their location and extent in the project area are poorly known, and they seem to occur in only a small part of the area.

The Mannetto Gravel was described and mapped by Fuller (1914, p. 80-85) from the western edge of the mid-island area to about as far east as the area between Wyandanch and Deer Park. The unit reportedly crops out at the tops of high hills, or near the crests of high hills capped by Ronkonkoma terminal moraine deposits. The author could not verify the location and extent of the Mannetto; consequently, the unit is not shown on the surficial geology map (pl. 1).

The Gardiners Clay is an interglacial marine deposit of Sangamon age. It is generally found in the south shore areas of Long Island where the depth to its surface is commonly 40 or more feet below sea level. The Gardiners Clay overlies Matawan-Magothy strata south of the mid-island area (Perlmutter and Todd, 1965, pl. 8), and some clay beds reported by well drillers in the southern part of the buried valley near Deer Park may be Gardiners Clay. However, this is uncertain, and the unit may not be present in the project area.

GROUND-WATER SYSTEM

SOURCE AND MOVEMENT OF GROUND WATER

The ground water on Long Island has its origin in precipitation that falls on the island. According to Cohen and others (1968, p. 36, 40, and 44), the precipitation on Long Island is disposed of as follows: nearly half returns to the atmosphere by evapotranspiration; a very small amount enters streams by direct runoff; and the remaining half percolates downward through the unconsolidated deposits to the water table and enters the ground-water reservoir.

The general ground-water movement on Long Island is from recharge areas near the center of the island to discharge areas at and near the shorelines. Ground water discharges by seepage into streams and by direct subsurface outflow into salty ground water, which in turn is hydraulically connected with bodies of salty surface water.

The horizontal components of the directions of ground-water flow in the upper glacial aquifer are shown in plate 6. In the vicinity of the major ground-water divide in the mid-island area (pl. 6), ground water generally moves downward from the upper glacial aquifer into the Magothy aquifer, and thence through the Raritan clay into the Lloyd aquifer. The vertical components of downward flow decrease with increasing distance both northward and southward of the divide. Beyond the northern and southern margins of the mid-island area, ground-water flow becomes virtually horizontal. Near the shorelines, the direction of flow is reversed, and ground-water movement is upward from the deeper aquifers toward the surface. Thus, because of the character of the flow system, under natural conditions virtually all the recharge to the Magothy and Lloyd aquifers in western Suffolk County originated in the mid-island area, and all of that recharge ultimately discharged from the ground-water system near the shorelines.

The movement of ground water through Long Island's aquifers in the horizontal direction is generally more rapid than movement in the vertical direction because of the occurrence of interbedded fine- and coarse-grained layers, and because the largest dimensions of unevenly shaped particles in the individual layers tend to be oriented horizontally. Approximate rates of ground-water movement can be computed from hydraulic gradients and estimated coefficients of permeability and porosities of the aquifers. In 1968, water in the upper glacial aquifers in the project area was moving horizontally at rates from less than 0.5 foot per day at points distant from centers of pumping, to hundreds of feet per day near the screens of pumping wells. At the same time, water in the Magothy aquifer was moving horizontally at rates from less than 0.2 foot per day at points distant from pumping, to hundreds of feet per day near the screens of pumping wells.

HYDRAULIC INTERCONNECTION OF AQUIFERS

The aquifers of Long Island are hydraulically interconnected. Layers of clay and silt within an aquifer or between aquifers serve to confine water below them, but they do not completely prevent the vertical movement of water through them. Ground water moves downward readily through coarse outwash deposits in the upper glacial aquifer. Vertical movement of water through the Magothy aquifer is impeded by beds and lenses of clay and silt. Because the clay and silt strata in the Magothy are not continuous, some water may move around lenses of this material in addition to moving slowly through the fine-grained strata.

The contact between the upper glacial and Magothy aquifers is not regular either in attitude or in composition of the contact surfaces. Glacial deposits in buried valleys are in lateral contact with truncated sandy beds in the Magothy. In the buried valleys water can laterally enter the Magothy at great depth directly from the glacial deposits, rather than the water having to move vertically to the same depth through less permeable Magothy beds. In the Huntington buried valley, glacial deposits extend completely through the Magothy aquifer to the underlying Raritan clay. (See plate 4.) In addition to the good hydraulic continuity between the upper glacial and Magothy aquifers in the buried valleys, good hydraulic continuity occurs between the aquifers outside the buried valleys where glacial sand and gravel deposits lie directly on Magothy sand beds. Thus, a fairly good hydraulic connection exists between the upper glacial and Magothy aquifers over large parts of the mid-island area, and the configuration of the piezometric surface of the Magothy aquifer is generally similar to that of the water table. However, in the mid-island area hydraulic heads in the Magothy are lower than those in the upper glacial aquifer because of the downward component of ground-water movement in the area.

The thick areally persistent Raritan clay that lies between the Magothy and Lloyd aquifers impedes but does not prevent downward movement of ground water into the Lloyd aquifer, and water in the Lloyd is tightly confined between the Raritan clay and bedrock. Downward leakage into the bedrock is negligible.

Figures 2 and 3 show hydrographs of wells screened in the upper glacial aquifer and the Magothy aquifer at the test-drilling sites in Brentwood and Hauppauge. At both sites, the heads in the deepest wells in the Magothy aquifer are about 2.5 to 3 feet lower than the heads in the shallowest wells in the upper glacial aquifer. The loss of head downward reflects the downward movement of ground water in the mid-island area. The hydrographs in figures 2 and 3 show that the heads in these two aquifers in the project area decrease at a fairly uniform rate with increasing depth. In addition, water-level fluctuations in the two groups of wells were very similar. Both of these facts, the uniform decrease in head and the similar water-level fluctuations, reflect the high degree of hydraulic interconnection between the upper glacial and Magothy aquifers.

The average vertical permeability of the Magothy aquifer is only poorly known. Estimates range from less than 1 to about 30 gpd per sq ft. Assuming that it averages about 5 gpd per sq ft in the mid-island area, the computed amount of downward ground-water movement through the Magothy aquifer in the vicinity of the ground-water divide in 1968 was about 0.4 mgd (million gallons per day) per square mile, and the estimated velocity of the downward movement was about 0.006 foot per day.

Because of the low permeability of the Raritan clay, the hydraulic-head loss across this unit is very much larger than the head loss across a comparable thickness of the Magothy and upper glacial aquifers. At the easternmost test site in the village of Lake Ronkonkoma, wells were screened near the base of the Magothy and near the top of the Lloyd aquifers (pl. 5, section A-A', S33379-80). In 1968, the head near the base of the Magothy aquifer (about 45.5 feet above sea level) was about 11.5 feet higher than the head in the Lloyd aquifer (about 34 feet above sea level). Head losses across the Raritan clay at localities east and west of the Lake Ronkonkoma area differ considerably. At Upton, about 12 miles east of the mid-island area, the head loss across the clay was about 6 feet in 1968; and at Plainview (in Nassau County), about 3 miles southwest of Melville, the head loss across the clay was about 42 feet. The differences in head loss from place to place are largely a result of differences in the vertical permeability and thickness of the Raritan clay.

The head in the Lloyd aquifer at Lake Ronkonkoma in 1968 (about 34 feet above sea level) was higher than either of the heads in the Lloyd at Upton (about 30.5 feet above sea level) and at the Suffolk-Nassau boundary (about 27.5 feet above sea level). The head in the Lloyd at Terryville, about 7 miles northeast of the Ronkonkoma area was about 21 feet above sea level in 1968, and it was 19 feet above sea level at Fire Island State Park in 1968, about 13 miles to the southwest. These data suggest that water in the Lloyd aquifer is moving radially from the Lake Ronkonkoma area. The estimated rate of horizontal movement of water in the Lloyd aquifer in the project area in 1968, was on the order of 0.1 foot per day.

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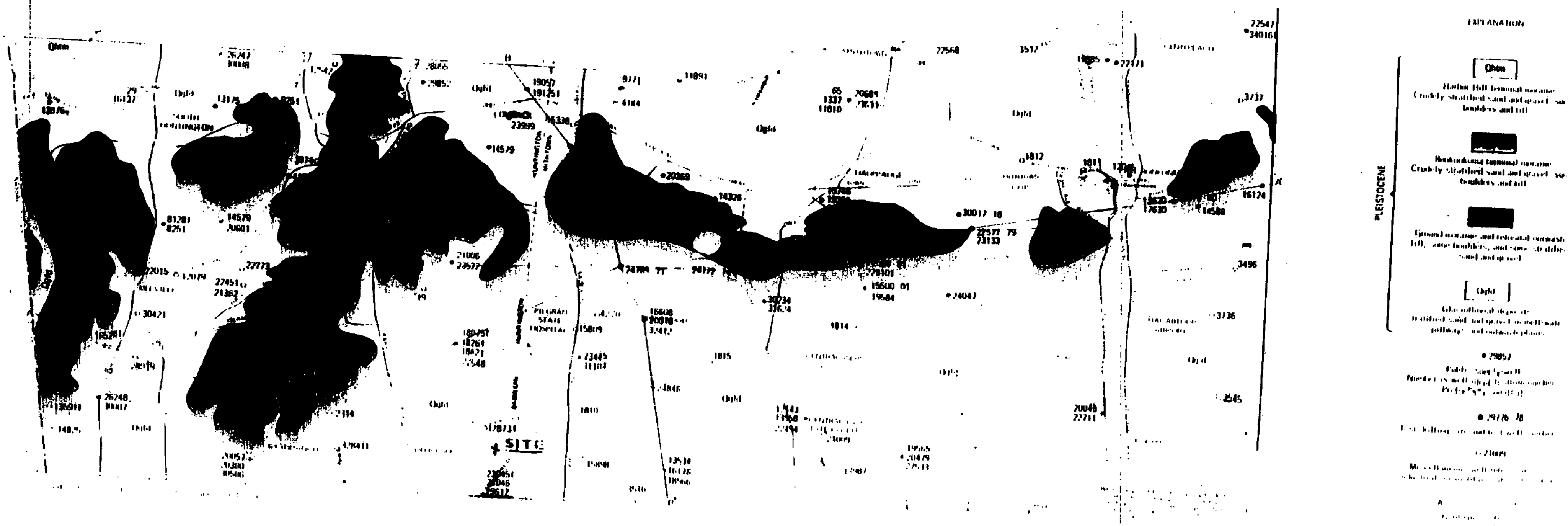
IN COOPERATION WITH THE
SUFFOLK COUNTY WATER AUTHORITY
AND
SUFFOLK COUNTY LEGISLATURE

LONG ISLAND WATER RESOURCES BULLETIN NUMBER 1 PLATE 1
PUBLISHED BY SUFFOLK COUNTY WATER AUTHORITY



MAP OF MID-ISLAND AREA SHOWING SURFICIAL GEOLOGY AND LOCATIONS OF SELECTED WELLS

Prepared by
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY, Albany, N.Y.

IN COOPERATION WITH THE
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AND
SUFFOLK COUNTY LEGISLATURE

LONG ISLAND WATER RESOURCES BULLETIN NUMBER 1 PLATE 4
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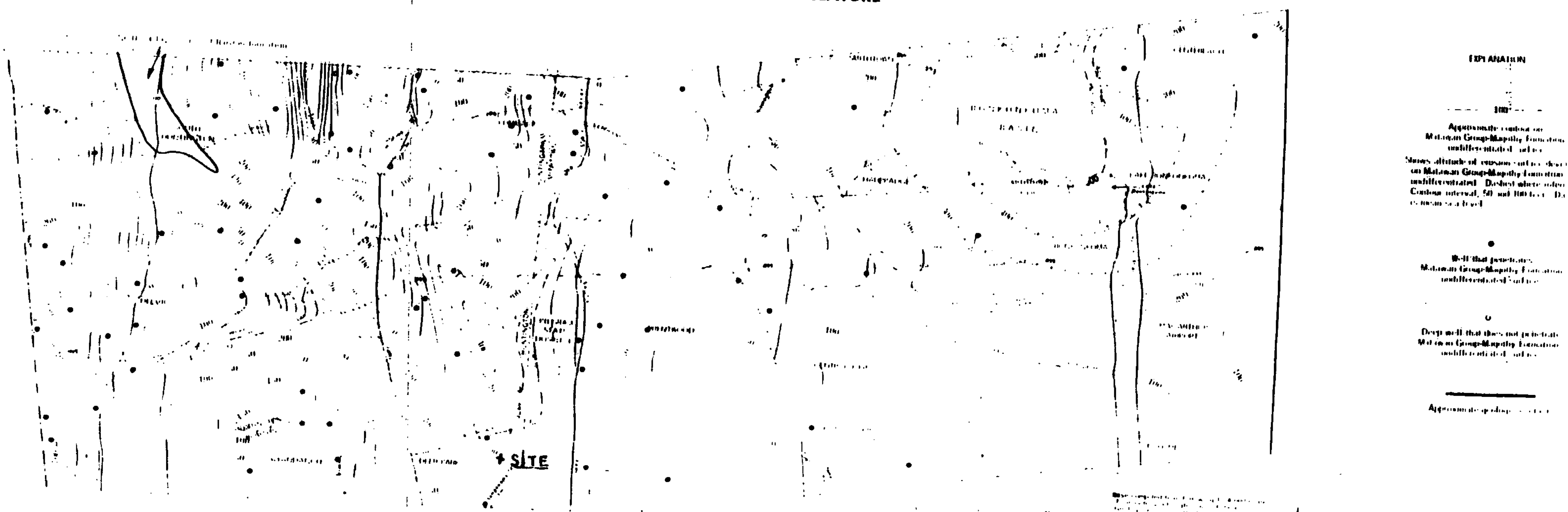

MAP OF MID-ISLAND AREA SHOWING CONTOURS ON THE SURFACE OF THE MATAWAN GROUP-MAGOTHY FORMATION, UNDIFFERENTIATED

Prepared by
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY, Albany, N.Y.

IN COOPERATION WITH THE
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LONG ISLAND WATER RESOURCES BULLETIN NUMBER 1 PLATE 3
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MAP OF MID ISLAND AREA SHOWING CONTOURS ON THE SURFACE OF THE CLAY MEMBER OF THE RARITAN FORMATION